DOCUMENT RESUME

ED 408 545 CG 027 821

TITLE Drug Control: Observations on Elements of the Federal Drug Control Strategy. Report to Congressional Requesters.

INSTITUTION General Accounting Office, Washington, DC. General Government Div.

REPORT NO GAO/GGD-97-42

PUB DATE Mar 97

NOTE 70p.

AVAILABLE FROM U.S. General Accounting Office, P.O. Box 6015, Gaithersburg, MD 20884-6015 (first copy free, additional copies $2 each, reduce for 100 or more copies mailed to single address 25% discount).

PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC03 Plus Postage.

DESCRIPTORS Cocaine; Crime Prevention; *Drug Legislation; *Federal Programs; Government Role; *Illegal Drug Use; *Intervention; Legislation; Program Effectiveness; Public Policy; *Substance Abuse

IDENTIFIERS Coast Guard; *Drug Policy; Drug Trafficking

ABSTRACT

Although the United States government invests vast sums of money in the war on drugs, the availability of drugs and the number of persons using illegal drugs are still serious problems. Information that Congress can use in improving drug control strategies is provided here. Some of the report's highlights include current research on promising approaches in drug abuse prevention targeted at school-age youth, including overviews of two types of drug prevention programs. Also of concern are drug treatment strategies for cocaine addiction; three approaches to treatment are discussed here. A summary of the effectiveness of international efforts to reduce illegal drug availability is provided, with special emphasis on the reasons behind the ready availability of drugs in the United States. Efforts made by the U.S. Coast Guard and its performance measures for anti-drug activities are also outlined, as is a summary of recent research on federal drug prevention- and treatment-related efforts. Three appendixes offer detailed information on the extent of the drug-use problem, drug abuse and prevention treatment, including the nature and objectives of the programs and an analysis of the Coast Guard's interdiction efforts. (RJM)

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Report to Congressional Requesters

March 1992

DRUG CONTROL

Observations on Elements of the Federal Drug Control Strategy

ED 408 545

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GAO/GGD-92-42

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United States
General Accounting Office
Washington, D.C. 20548

General Government Division

B-275944

March 14, 1997

The Honorable Frank R. Wolf
Chairman, Subcommittee on
Transportation and Related Agencies
Committee on Appropriations
House of Representatives

The Honorable John Edward Porter
Chairman, Subcommittee on Labor, Health
and Human Services, and Education
Committee on Appropriations
House of Representatives

The federal government's investment in the war on drugs has grown to over $15 billion in fiscal year 1997. Yet the availability of drugs on U.S. streets and the number of persons using illegal drugs continue to be serious problems. We have reported many times over the past decade on federal antidrug efforts. This report responds to your October 30, 1996, request that we provide information to help Congress examine and improve the federal government's drug control[1] strategy.

Specifically, this report (1) identifies findings of current research on promising approaches in drug abuse prevention targeted at school-age youth; (2) describes promising drug treatment strategies for cocaine addiction; (3) summarizes our recent work assessing the effectiveness of international efforts to reduce illegal drug availability, including interdiction; (4) assesses whether the U.S. Coast Guard's performance measures for its antidrug activities conform to the principles of the Government Performance and Results Act of 1993 (GPRA); and (5) summarizes several of our recent products on federal drug prevention- and treatment-related efforts.

Background

In 1995, an estimated 22.7 million Americans had used at least one illicit drug in the past year—17.8 million had used marijuana, 3.7 million had used cocaine, and 428,000 had used heroin.[2] From 1992 to 1995, there was

[1]As defined in the Anti-Drug Abuse Act of 1988, P.L. 100-690, "drug control" is any activity conducted by a national drug control program agency involving supply reduction and demand reduction. Supply reduction includes international drug control, foreign and domestic drug enforcement intelligence, interdiction, and domestic drug law enforcement, including law enforcement directed at drug users. Demand reduction includes drug abuse education, prevention, treatment, research, and rehabilitation.

[2]National Household Survey on Drug Abuse: Population Estimates 1995, Substance Abuse and Mental Health Services Administration, 1996.

a pronounced rise in the estimated drug use rates among school-age youths—the estimated rate of marijuana use by 8th grade students increased from 7.2 percent to 15.8 percent; the estimated rate of marijuana use by 10th graders rose from 15.2 percent to 28.7 percent; and for 12th graders, the estimated rate of marijuana use increased from 21.9 percent to 34.7 percent. According to the Office of National Drug Control Policy (ONDCP) social costs of illegal drug use were estimated at $67 billion annually. In addition, ONDCP reported that in the 1990s there were 100,000 drug-related deaths, approximately 20,000 deaths per year.[1]

In 1988, Congress created ONDCP to lead the nation's war on drugs. The federal budget for drug abuse control climbed from $1.5 billion in fiscal year 1981 to about $15.1 billion in fiscal year 1997.[2] Approximately $1.8 billion of the over $15 billion authorized by Congress to implement the 1996 national drug control strategy is devoted to international programs with the goals of shielding U.S. air, land, and sea frontiers from the drug threat; breaking foreign drug sources of supply; and destroying international drug-trafficking organizations. (A more complete discussion of the national drug control strategy goals is in app. I.)

In 1988, we provided Congress with an overview of the drug problem and the federal response.[3] The report described the drug problem in the 1980s nationally and in six major cities where drug problems were among the worst in the nation. In 1993, in conjunction with our report on the reauthorization of ONDCP,[4] we summarized the results of our work to date on U.S. antidrug efforts and the participation of federal, state, and local agencies in the national drug control strategy. These two reports identified the immensity of the challenges facing the antidrug effort, challenges that range from helping foreign governments break their dependence on drug-related revenues to helping drug users in this country turn away from what they may see as the allure of drugs.

We recommended in our 1993 report that ONDCP,[5] as the coordinator of the federal drug control effort, (1) develop additional measures to assess

[1]The National Drug Control Strategy, 1996. Office of National Drug Control Policy, Washington, D.C.

[2]In constant 1987 dollars. National Drug Control Strategy: 1996. Office of National Drug Control Policy, Washington, D.C.

[3]Controlling Drug Abuse: A Status Report (GAO/GGD-88-39, Mar. 1, 1988).

[4]Drug Control: Reauthorization of the Office of National Drug Control Policy (GAO/GGD-93-144, Sept. 28, 1993).

[5]GAO/GGD-93-144.

progress in reducing drug use, (2) develop performance measures to evaluate the contributions made by major components of current antidrug efforts and significant new initiatives, and (3) incorporate these measures into annual drug control strategies.

GPRA was enacted in 1993 to, among other things, improve performance measurement by federal agencies. It provides a useful framework for assessing the effectiveness of federal drug control efforts. It requires agencies to set goals, measure performance, and report on their accomplishments. Under GPRA, it is envisioned that federal agencies will move away from their concentration on traditional workload measures, such as staffing and activity levels, and move toward a focused assessment of their results.

Results in Brief

Recent research points to two types of promising drug prevention approaches for school-age youth. The first approach emphasizes drug resistance skills, generic problem-solving/decisionmaking training, and modification of attitudes and norms that encourage drug use (the psychosocial approach). The second approach involves the coordinated use of multiple societal institutions, such as family, community, and schools, for delivering prevention programs (the comprehensive approach.) Both approaches have reduced student drug use as well as strengthened the individual's ability to resist drugs in both short- and longer-term programs.

Three approaches have been found to be potentially promising in the treatment of cocaine use. These approaches include (1) avoidance or better management of drug-triggering situations (relapse prevention therapy); (2) exposure to community support programs, drug sanctions, and necessary employment counseling (community reinforcement/contingency management); and (3) use of a coordinated behavioral, emotional, and cognitive treatment approach (neurobehavioral therapy). Drug abuse clients using these approaches have maintained extended periods of cocaine abstinence and greater retention in treatment programs.

While these prevention and treatment approaches have shown promising outcomes in some programs, sufficient evaluative research has not been done to test their effectiveness and their applicability among different populations in varied settings. This research should help policymakers better focus efforts and resources in an overall drug control strategy.

Despite some successes, United States and host countries' efforts have not materially reduced the availability of drugs in the United States for several reasons. First, international drug-trafficking organizations have become sophisticated, multibillion dollar industries that quickly adapt to new U.S. drug control efforts. Second, the United States faces other significant and long-standing obstacles, such as inconsistent funding for U.S. international drug control efforts, competing foreign policy objectives, organizational and operational limitations, and a lack of ways to tell whether or how well counternarcotics efforts are contributing to the goals and objectives of the national drug control strategy, which results in an inability to prioritize the use of limited resources. Third, in drug-producing and transit countries, counternarcotics efforts are constrained by competing economic and political policies, inadequate laws, limited resources and institutional capabilities, and internal problems such as terrorism, corruption, and civil unrest.

Although there is no panacea for resolving all of the problems associated with illegal drug trafficking, in our February 1997 report,[8] we recommended that the Director of ONDCP: (1) complete the development of a long-term plan with meaningful performance measures and multiyear funding needs that are linked to the goals and objectives of the international drug control strategy; (2) at least annually, review the progress made and adjust the plan, as appropriate; (3) enhance support for the increased use of intelligence and technology to improve U.S. and other nations' efforts to reduce supplies of and interdict illegal drugs; and (4) lead in developing a centralized lessons-learned data system to aid agency planners and operators in developing more effective counterdrug efforts.

Measuring the effectiveness of U.S. antidrug activities has been a continuing problem in assessing the results of the national drug control strategy. In reauthorizing ONDCP in 1993, Congress specified that ONDCP's performance measurement system should assess changes in drug use, drug availability, the consequences of drug use, drug treatment capacity, and the adequacy of drug treatment systems. To implement the statutory requirements, which are consistent with recommendations in our 1993 report,[9] ONDCP is developing national-level measures of drug control performance.

[8]Drug Control: Long-Standing Problems Hinder U.S. International Efforts (GAO/NSIAD-97-75, Feb. 27, 1997).

[9]GAO/GGD-93-144.

Similarly, the Coast Guard is developing performance measures to assess the results of its antidrug activities. It appears from our review of the Coast Guard's strategic and performance plans that it has taken steps toward conforming with certain GPRA principles. However, it is too soon to tell whether performance measurement systems being developed by ONDCP and the Coast Guard will be fully consistent with the results-oriented principles of GPRA.

Objectives, Scope, and Methodology

In responding to your request, we adopted the following approach in meeting the objectives agreed upon with the Subcommittees.

We identified and summarized findings and conclusions from our recent, relevant reports and testimonies that examined U.S. antidrug programs and activities, including international initiatives and domestic measures, aimed at interdicting illegal drugs and reducing drug use through prevention or treatment. We identified and reviewed selected literature on drug prevention and drug treatment research and evaluated syntheses of research literature, including data on program outcomes, to identify promising approaches in drug abuse prevention that focus on school-age youth. (See app. II for additional information on the methodology we used.)

To obtain information on the U.S. Coast Guard's performance measures for its antidrug activities, we interviewed officials responsible for managing the Coast Guard's drug interdiction program and reviewed key agency documents such as the Coast Guard's preliminary performance plans (for implementing the GPRA). We compared the Coast Guard's performance measurement plans with GPRA to determine whether they conform to the principles of the act.

We did our review from November 1996 to January 1997 in accordance with generally accepted government auditing standards. We obtained comments on a draft of this report from ONDCP. These comments are discussed at the end of this letter.

Two Drug Prevention Approaches Show Promise Among School-Age Youth

Recent research demonstrates basically two types of prevention approaches that show promise when used in programs with school-age youths. The first approach emphasizes individual drug resistance skills, generic problem-solving/decisionmaking training, and modification of attitudes and norms that encourage drug use (the psychosocial approach).

The second approach involves the use of multiple societal institutions (e.g., schools, families, media, and community), working together in collaborative fashion, to achieve a multicomponent approach to prevention (the comprehensive approach).[10] These approaches have been used in several notable programs. However, the extent to which these promising approaches yield results in a wide range of community settings remains an open question.

The major aim of drug abuse prevention programs is to prevent the initial use of both illicit and nonprescribed legal drugs and avert subsequent drug-related problems (like AIDS and other sexually transmitted diseases.) For youths already experimenting with drugs, or using them on a recreational basis, prevention programs may be aimed at early screening and intervention activities, with the end goal of eliminating drug use, or at least long-term cessation.

In addition, drug prevention programs have focused on strengthening the individual's ability to resist drugs. This has taken the form of helping individuals to minimize the drug "risk factors" in their lives as well as building up their psychological "protective factors." Risk factors that have been related to an individual's subsequent drug use activity include a variety of personal, social, and community factors, including societal norms favorable to drug use, easy access to drugs, and favorable parental attitudes toward drug use. Enhancing one's coping skills, problem-solving ability, and self-esteem, however, provides some alternative means of strengthening the individual's protection or resilience to drug use in high-risk situations.

The strategies used in prevention programs can be classified by three interventions (universal, selective, and indicated) that target different audiences: (1) universal interventions are directed at the general population, (2) selective intervention strategies target individuals or subgroups at risk for drug abuse, and (3) indicated interventions are directed at individuals who already are using drugs but have not yet met the criteria for a diagnostic disorder. Prevention activities can be conducted in school settings, in peer groups, within the family context, or within the larger community.

Drug prevention activities can encompass a wide array of functions. They include the provision of information and education classes or training

[10]Institute of Medicine, Pathways of Addiction: Opportunities in Drug Abuse Research (Washington, D.C.: National Academy Press), 1996, pp. 141-145.

programs to enhance one's knowledge of drug abuse and alternative lifestyles, teaching skills to cope with or manage potential high-risk drug situations, enhancing generic skills for the solution of general life problems and decisionmaking, as well as encouraging communities to implement societalwide institutional approaches to drug problems.

The following features are associated with positive outcomes in many studies of prevention programs: (1) increasing awareness of the social influences that promote drug use (for example, peer pressure); (2) modifying societal norms or expectations concerning drug use; and (3) targeting multiple aspects of youths' lives through use of school, family, peer, and community factors.

Drug prevention programs that use the psychosocial and comprehensive approaches have shown promising results among school-age youth in reducing drug use and strengthening the individual's ability to resist drugs. Although information dissemination, effective education, and alternatives to drug use are approaches that have been used in prevention programs, they have not been shown to be consistently effective when utilized individually. However, they have been included in promising comprehensive approaches to drug prevention.

Our review of the research on drug prevention programs that have outcome data revealed several programs that show promise when using the psychosocial or comprehensive approach. Some of the most notable psychosocial and comprehensive drug programs include (1) the Adolescent Alcohol Prevention Trial (psychosocial), which demonstrated that the increase in initial use of marijuana for intervention participants was 65-percent less than that of a comparison control group at 1 year follow-up and 23-percent less than control group participants for alcohol; (2) the Life Skills Training Program (psychosocial) showed 44 percent fewer intervention participants reported use of three drugs over a specified period of time, as compared to control group participants; and (3) the Midwestern Prevention Project—also known as Project Star or I-Star (comprehensive), showed a 20- to 40-percent net reduction in the use of two drugs by school-age youth over a 3-year period.

Three Approaches Show Promise in the Treatment of Cocaine Abuse and Dependency

Three approaches have been found to be potentially promising in the treatment of cocaine abuse and dependency:

- "Relapse prevention" provides users with the ability to better recognize drug "triggering" events, places, people and situations, and helps individuals develop better coping strategies to resist their specific triggers.
- "Community reinforcement/contingency management" consists of several community-oriented components, including the participation of the client's family member or significant other in the treatment process; management incentives or rewards for drug abstinence; employment counseling when needed; and encouragement of participation in recreational activities as health alternatives to a drug-free lifestyle.
- "Neurobehavioral therapy" consists of a comprehensive behavioral, emotional, and cognitive treatment approach, utilizing individual therapy, drug education, and self-help group involvement. According to research results, each approach has demonstrated positive outcome results with regard to extended periods of cocaine abstinence and greater client retention in treatment.

The National Institute on Drug Abuse (NIDA) has also supported the testing of 20 major drugs in the treatment of cocaine. However, no medication has been shown to be consistently effective in the treatment of cocaine, and no medication has been submitted to the Food and Drug Administration for approval for this purpose.

Attaining abstinence is a major goal of drug treatment. Once initial abstinence is attained, efforts are directed toward maintaining continued abstinence over more extended periods of time. Individual objectives of treatment can include the social and personal rehabilitation of the individual (including improved health and reduced psychological problems), enhancement of familial relationships, reduction of criminal behavior and resolution of legal problems, improved coping skills, and attainment of educational and occupational aspirations.

The range of treatment services can include diagnostic assessment, detoxification (when necessary), medication, counseling, drug education, psychotherapy, case management, and self-help group participation. The Institute of Medicine (IOM) and others have identified four types of treatment modalities in which these services are delivered: (1) outpatient methadone maintenance facilities (primarily for opiate users), (2) outpatient nonmethadone or drug-free facilities, (3) chemical

dependency programs, and (4) long-term residential therapeutic communities.

Our review of recent cocaine treatment research identifies several programs that have shown positive outcome results using cognitive/behavioral therapies. For example, one relapse prevention program[11] showed cocaine dependent clients were able to remain abstinent at least 70 percent of the time while in treatment. A community reinforcement/contingency management program[12] showed that 42 percent (or almost half) of the participating cocaine-dependent clients were able to achieve nearly 4 months of continuous abstinence. And a neurobehavioral program[13] showed that more than a third (38 percent) of the clients were abstinent from the drug at the 6-month follow-up.

Experts Say Additional Research Is Needed for Drug Abuse Prevention and Treatment

Regardless of early positive results in certain drug abuse prevention and treatment approaches, research experts suggest that additional research is needed to better identify and understand elements of effective prevention and treatment. They say substantiating early program results through further research and evaluation is an important step in advancing promising drug prevention and treatment approaches. It is also important in helping policymakers to better direct the nation's efforts and resources toward reducing or eliminating drug abuse or dependency.

Prevention initiatives for future research that NIDA, IOM, and others have mentioned include (1) the utility of booster sessions in extending positive program outcomes, (2) determining the mix of approaches that yield the most significant outcome results, and (3) how best to disseminate positive findings to the larger community, and (4) assessing those types of approaches that work best for different population groups. Future cocaine treatment initiatives mentioned include (1) identifying improved or additional cognitive/behavioral strategies to reduce relapse, (2) testing the effectiveness and safety of new medications to prevent or reduce drug intake, and (3) identifying the necessary components of cognitive/behavioral strategies and medications that lead to successful outcomes.

[11]Kathleen Carroll and others, "Psychotherapy and Pharmacotherapy for Ambulatory Cocaine Abusers," Archives of General Psychiatry, 51 (1994), 177-187.

[12]Stephen Higgins and others, "Achieving Cocaine Abstinence With a Behavioral Approach," American Journal of Psychiatry, 150:5 (1993), 763-69.

[13]Stephen Shoptaw and others, "The Matrix Model of Outpatient Stimulant Abuse Treatment: Evidence of Efficacy," Journal of Addictive Diseases, 13:4 (1994), 129-41.

See appendix II for a detailed description of the results of our review of selected literature on drug prevention for school-age youth and cocaine treatment approaches.

Summary of Selected GAO Products on Federal Prevention- and Treatment-Related Efforts

Recognizing the link between drugs and crime, Congress authorized federal grants-in-aid to states and localities to assist them in addressing drug-related crime in their communities. We have reported on three such programs during the past few years—drug courts, Operation Weed and Seed, and Treatment Alternatives to Street Crime (TASC).

Title V of the Violent Crime Control and Law Enforcement Act of 1994 authorized the award of federal grants to states and localities to establish drug courts. In 1995, we reported that (1) in exchange for dismissed charges or reduced sentences, drug-using, primarily nonviolent defendants were being diverted to drug courts where judges monitor their progress through frequent status hearings; (2) drug court programs varied in length, participant eligibility, funding, and other practices; (3) as of March 1995, there were at least 37 drug courts operating nationwide; (4) 33 of these drug courts had accepted over 20,000 defendants; (5) most drug courts did not accept offenders with prior violent convictions, and none accepted those currently charged with a violent offense; and (6) drug courts had not been operating long enough to determine their overall effectiveness.[14]

Operation Weed and Seed is a Department of Justice grant program. Its strategy is to support community-based, multiagency efforts to weed out crime from targeted neighborhoods, then seed the site with a variety of programs and resources to prevent crime from recurring. In 1994, we reported that (1) community involvement was important to the program's effectiveness and long-term success; (2) community residents at local sites needed to be involved in/control steering committees and help design and implement activities; (3) the emphasis on activities varied at local levels and community policing was a strong component of many programs; (4) weeding efforts had removed criminals from communities and increased interagency cooperation; (5) program officials believed that Justice should increase its funding for seeding activities so that seeding and weeding activities would have equal funding; (6) Justice had established guidelines to monitor program funds and compliance with its policies and also an interagency work group to coordinate social services agencies' recommendations on seeding programs and exchange

[14]Drug Courts: Information on a New Approach to Address Drug-Related Crime (GAO/GGD-95-159BR, May 22, 1995).

information; and (7) the program's management structure provided for federal, state, local, private agency, and citizen participation.[15]

The TASC program is an offender case management program designed to link drug-using offenders within the criminal justice system to community-based drug abuse treatment as an alternative or supplement to criminal penalties. In a 1993 report, we concluded that TASC appeared promising as a way to help reduce offender drug use. The TASC program model incorporated many elements that had been found to contribute to effective drug abuse treatment, including (1) coordinating criminal justice and treatment efforts, (2) providing incentives to enter treatment, (3) matching offenders with the most appropriate treatment, and (4) monitoring with drug testing.[16] (See Related GAO Products at the end of this report for a list of other products on treatment and prevention.)

Obstacles to U.S. International Drug Control Efforts

Over the past 10 years, U.S. agencies involved in counternarcotics efforts have attempted to reduce the supply and availability of illegal drugs in the United States by implementing the U.S. international drug control strategy. Although these efforts have achieved some successes, we found that the flow of cocaine, heroin, and other illegal drugs into the United States continues, and the availability of drugs and the cultivation of drug crops have not been reduced.[17]

Between 1988 and 1995, illegal drug cultivation and drug-related activities increased throughout South America, Mexico, the Caribbean, Southeast Asia, and other countries. The total net area of cultivation for coca leaf and opium poppy increased. Between 1988 and 1995, about 56,000 hectares[18] of coca plants were eradicated. However, while the areas under cultivation have fluctuated from year to year, farmers planted new coca faster than existing crops were eradicated. Thus, the net area under cultivation increased from 186,000 hectares to 214,800 hectares, or by about 15 percent.[19] Also during this period, the amount of opium poppy under cultivation increased by over 46,000 hectares, or by about

[15] Weed and Seed: Program Objectives (GAO/GGD-94-128R, May 10, 1994).

[16] Drug Control: Treatment Alternatives Program for Drug Offenders Needs Stronger Emphasis (GAO/GGD-93-61, Feb. 11, 1993).

[17] GAO/NSIAD-97-75.

[18] One hectare equals 2.47 acres.

[19] According to officials at the Department of State, initial information indicates that, during 1996, significant reductions occurred in the amount of coca under cultivation in Peru.

25 percent. Moreover, Drug Enforcement Administration (DEA) and National Narcotics Intelligence Consumers Committee data on the availability of illegal drugs, as measured by the average price and purity of the drugs, showed that the price and purity of cocaine have remained relatively constant since 1988. According to a DEA official, all other factors being equal, had the United States achieved substantial success in reducing supply, and demand remained constant, the prices of these drugs would have increased, and the purity would have decreased.

The amount of cocaine and heroin seized between 1990 and 1995 had little impact on the availability of illegal drugs in the United States in satisfying estimated U.S. demand. In 1996, the National Narcotics Intelligence Consumers Committee estimated the potential cocaine production for 1995 at about 780 metric tons, of which about 230 metric tons were seized worldwide. The remaining amount was more than enough to meet U.S. demand, which was estimated at about 300 metric tons per year. Heroin production in 1995 was estimated to be over 300 metric tons, while seizures were about 32 metric tons, and U.S. demand was between 10 and 15 metric tons.

When confronted with threats to their activities, drug-trafficking organizations use a variety of techniques to quickly change their modes of operation, thus avoiding capture of their personnel and seizure of their illegal drugs. For example, when air interdiction efforts have proven successful, traffickers have increased their use of maritime and overland transportation routes. According to recent U.S. government reports, even after the capturing or killing of several drug cartel leaders in Colombia and Mexico, other leaders or organizations soon filled the void, and adjusted their areas of operations.

In carrying out its foreign policy, the United States seeks to promote U.S. business and trade, improve human rights, and support democracy as well as reduce the flow of illegal drugs into the United States. These objectives compete for attention and resources, and U.S. officials must make tough choices about which to pursue more vigorously. As a result of U.S. foreign policy decisions, counternarcotics issues have often received less attention than other objectives. Our work has shown the difficulties in balancing counternarcotics and other U.S. foreign policy objectives. Sometimes, resources are shifted to satisfy other policy objectives. For example, as we reported in 1995, $45 million originally intended for counternarcotics assistance for cocaine source countries was reprogrammed by the Department of State to assist Haiti's democratic

transition.[20] A similar diversion occurred in the early 1990s, when U.S. Coast Guard assets in the Caribbean were reallocated from counternarcotics missions to the humanitarian mission of aiding emigrants in their mass departures from Cuba and Haiti.

We have reported that in some cases the United States has not adequately controlled the use of U.S. counternarcotics assistance and it was unable to ensure that the assistance was used as intended. Despite legislative requirements mandating controls over U.S.-provided assistance, we found instances of inadequate oversight of counternarcotics funds. For example, between 1991 and 1994, we issued three products in which we concluded that U.S. officials lacked sufficient oversight of aid to ensure that it was being used effectively and as intended in Peru and Colombia.[21] In 1996, we reported that the government of Mexico had misused U.S.-provided counternarcotics helicopters when it used them to transport Mexican military personnel during the 1994 uprising in the Mexican state of Chiapas.[22]

During this period, we reported on other significant long-standing obstacles faced by the United States in its international drug control efforts, including the inconsistency in the amount of funds applied to international drug control programs, difficulty in obtaining bilateral and multilateral donor support for U.S. drug control efforts, and organizational and operational limitations. For example, several of our products have identified problems involving competing priorities and interagency rivalries, lack of operational coordination, and inadequate staffing of joint interagency task forces.

Regarding obstacles confronting foreign governments' antidrug efforts, we have repeatedly reported that narcotics-related corruption is a long-standing problem in U.S. and foreign governments' efforts to reduce drug-trafficking activities. For example, we reported in 1991 and 1993 that corruption in Colombia and Peru—two of the countries most significantly involved in producing and shipping cocaine—had spread throughout the civilian governments, the military force, and the police force and that even though the governments were attempting to reduce corruption, its

[20] Drug War: Observations on U.S. International Drug Control Efforts (GAO/T-NSIAD-95-194, Aug. 1, 1995).

[21] Drug War: Observations on Counternarcotics Aid to Colombia (GAO/NSIAD-91-296, Sept. 30, 1991); The Drug War: U.S. Programs in Peru Face Serious Obstacles (GAO/NSIAD-92-36, Oct. 21, 1991); and The Drug War: Colombia Is Implementing Antidrug Efforts, but Impact Is Uncertain (GAO/T-NSIAD-94-53, Oct. 5, 1993).

[22] Drug Control: Counternarcotics Efforts in Mexico (GAO/NSIAD-96-163, June 12, 1996).

pervasiveness made such action difficult.[23] We also reported that corruption remained a serious, widespread problem in Colombia and Mexico, the two countries most significantly involved in producing and shipping cocaine.[24] In March 1996, the State Department reported that persistent corruption within Mexico continued to undermine both police and law enforcement operations. Drug-related corruption also remained widespread, although to a lesser extent, throughout several island nations in the Caribbean[25] and in Bolivia and Peru.

The governments involved in drug eradication and control have other problems that cause competition for limited resources. As we reported in 1988, six drug-producing countries' efforts to curtail drug cultivation were constrained by political, economic, and/or cultural problems that far exceeded counternarcotics program managers' abilities to resolve.[26] Many of the source countries lacked the political will necessary to reduce coca and opium poppy cultivation partly because drug trafficking contributes to their economies. Also, as we reported in 1992, severe economic problems in Brazil, Ecuador, and Venezuela limited these governments' ability to devote the resources needed to develop effective drug control efforts.[27] Internal strife in the source countries is yet another problem that competes for resources. For example, two primary source countries—Peru and Colombia—must allocate scarce funds to support military and other internal defense operations to combat guerilla groups, which negatively affect counternarcotics operations. In Peru, for example, we reported that terrorist activities had hampered antidrug efforts.[28]

Inadequate resources and institutional capabilities of these and other foreign countries have limited arrests and convictions of drug traffickers. For example, in 1991 we reported that the lack of resources and adequately trained police personnel hindered Panama's ability to address drug-trafficking and money-laundering activities.[29] Also, in 1994 we

[23]The Drug War: Observations on Counternarcotics Programs in Colombia and Peru (GAO/T-NSIAD-92-2, Oct. 23, 1991) and The Drug War: Colombia Is Undertaking Antidrug Programs, but Impact Is Uncertain (GAO/NSIAD-93-158, Aug. 10, 1993).

[24]Drug War: Observations on the U.S. International Drug Control Strategy (GAO/T-NSIAD-95-182, June 27, 1995) and Drug Control: Counternarcotics Efforts in Mexico (GAO/NSIAD-96-163, June 12, 1996).

[25]Drug Control: U.S. Interdiction Efforts in the Caribbean Decline (GAO/NSIAD-96-119, Apr. 17, 1996).

[26]Controlling Drug Abuse: A Status Report (GAO/GGD-88-39, Mar. 1, 1988).

[27]The Drug War: Extent of Problems in Brazil, Ecuador, and Venezuela (GAO/NSIAD-92-226, June 5, 1992).

[28]The Drug War: U.S. Programs in Peru Face Serious Obstacles (GAO/NSIAD-92-36, Oct. 21, 1991).

[29]The War on Drugs: Narcotics Control Efforts in Panama (GAO/NSIAD-91-233, June 16, 1991).

reported that Central American countries did not have the resources or institutional capability to combat drug trafficking and depended heavily on U.S. counternarcotics assistance.[30] Our more recent work indicates that these problems have persisted over time. For example, we reported in 1995 that the Colombian national police had only 10 helicopters available for interdiction and eradication operations in the entire country.[31]

There is no easy remedy for overcoming all of the obstacles posed by drug-trafficking activities. International drug control efforts aimed at stopping the production of illegal drugs and drug-related activities in the source and transit countries are only one element of an overall balanced national drug control strategy. Alone, these efforts will not likely solve the U.S. drug problem. Overcoming many of the long-standing obstacles to reducing the supply and smuggling of illegal drugs requires a long-term commitment. As stated in our February 1997 report,[32] we believe the United States can improve the effectiveness of planning and implementing its current international drug control efforts by (1) developing a multiyear plan with measurable goals and objectives and a multiyear funding plan; (2) at least annually, review the progress made and adjust the plan, as appropriate; (3) enhance support for the increased use of available intelligence and technologies and increasing intelligence and technology, and (4) lead in developing a centralized "lessons-learned" data system to aid agency planners and operators in developing more effective counterdrug efforts.

Summary of Our Work on Federal Domestic Drug Interdiction Programs

We have reported over the past few years on various aspects of domestic drug interdiction. For example, criminal activities such as illegal drug sales produce a tremendous amount of currency that would be regarded as suspicious unless it was disguised as legitimate through various money laundering schemes. Consequently, U.S. efforts to combat money laundering rely heavily upon the reporting of transactions involving large amounts of cash. In March 1994, we reported that the Customs Service was aware of the impact of currency smuggling on drug control efforts and at that time had increased national oversight of and emphasis given to outbound inspection programs to interdict unreported currency.[33]

[30]Drug Control: Interdiction Efforts in Central America Have Had Little Impact on the Flow of Drugs (GAO/NSIAD-94-233, Aug. 2, 1994).

[31]Drug War: Observations on U.S. International Drug Control Efforts (GAO/T-NSIAD-95-194, Aug. 1, 1995).

[32]GAO/NSIAD-97-75.

[33]Money Laundering: U.S. Efforts to Fight It Are Threatened by Currency Smuggling (GAO/GGD-94-73, Mar. 9, 1994).

Experts estimate that most of the cocaine entering the United States enters from Mexico across the southwest border. For example, it has been estimated that between 50 and 70 percent of the cocaine smuggled into the United States transits through Mexico, entering primarily by land across the southwest border. We concluded that the Immigration and Naturalization Service's (INS) 1994 national strategy for gaining control of the nation's borders had affected drug smuggling in that smugglers began rerouting drugs from San Diego and El Paso to other southwest border areas.[34]

We also examined INS' role in the Organized Crime Drug Enforcement Task Force program, which is designed to be a comprehensive, multiagency attack on drug-related and money laundering enterprises. Nine federal agencies, including INS, and various state and local organizations comprised individual task forces. The task forces were to use the special skills and expertise of all participating agencies and rely on the jurisdictional authority of those agencies. We reported in July 1994[35] that when carrying out task force investigations, INS contributed its alien-related expertise and its jurisdictional authority to apprehend and remove criminal alien drug traffickers from the country.

Difficulties in Measuring Agencies' Antidrug Performance

In a 1990 report,[36] we pointed out the difficulties in measuring the effectiveness of drug interdiction activities. For example, we noted that while agencies generally view the number or amounts of seizures as an indicator of program success, a decrease in seizures does not necessarily mean that a program was less effective than it was previously or less effective than other programs making more seizures.

We took this concern one step further in our 1993 report on the reauthorization of ONDCP.[37] We found that national strategies contained inadequate measures for assessing the contributions of component programs for reducing the nation's drug problems and recommended that, as part of its reauthorization of ONDCP, Congress direct the agency to develop better performance measures. In reauthorizing ONDCP in 1993,

[34]Border Control: Revised Strategy Is Showing Some Positive Results (GAO/GGD-95-30, Dec. 29, 1994).

[35]INS Drug Task Force: Federal Agencies Supportive of INS Efforts (GAO/GGD-94-143, July 7, 1994).

[36]Drug Interdiction: Funding Continues to Increase but Program Effectiveness Is Unknown (GAO/GGD-91-10, Dec. 11, 1990).

[37]Drug Control: Reauthorization of the Office of National Drug Control Policy (GAO/GGD-93-144, Sept. 29, 1993).

Congress specified that ONDCP's performance measurement system should assess changes in drug use, drug availability, the consequences of drug use, drug treatment capacity, and the adequacy of drug treatment systems.

ONDCP has been working toward this end since our 1993 report. In 1994, ONDCP began efforts to measure the international supply reduction components of the national drug control strategy. In early 1996, ONDCP decided to expand this effort to all drug control programs and activities. As of January 1997, ONDCP had convened working groups composed of representatives from all federal drug control agencies as well as from state, local, and private entities to develop national level measures of drug control performance. ONDCP plans to submit proposed national performance measures to federal agencies involved in national drug control efforts for comment by the summer of 1997.

We reported in September 1996 that the Customs Service was developing some nontraditional measures to use in assessing the effectiveness of its drug interdiction activities.[38] In addition to the traditional measures of seizures, arrests, indictments, and convictions, Customs began measuring the reduction in the number of drug smugglers who attempt to race a drug-laden vehicle through a port of entry, and the ratio of seizures to examinations conducted for cargo and passengers. In addition, Customs is estimating the number of persons violating U.S. laws at major air and land ports.

The Coast Guard has taken steps toward conforming with certain GPRA principles. It has defined its performance goal as "reducing the amount of illegal drugs entering the country through maritime routes by 25 percent over 5 years." It plans to gather data to compare the amount of drugs it seizes with estimates of the amount of drugs produced in source countries and shipped to the United States via maritime routes.

However, agency officials recognize that challenges remain. The Coast Guard has developed preliminary performance plans that reflect a need for additional work in three areas: (1) developing goals and ways of achieving them, (2) developing data to measure the results of its actions, and (3) identifying wide variety of constraints that could influence the effectiveness of its antidrug activities. (See app. III for more details on the Coast Guard's performance measures.)

[38]Customs Service: Drug Interdiction Efforts (GAO/GGD-96-189BR, Sept. 26, 1996).

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Conclusions

ONDCP and several other agencies are developing measures of the results of their antidrug activities. Used together, these measures could provide information congressional and executive branch decisionmakers need to assess program performance and make judgments about future funding levels. It is important to consider both ONDCP and operational agency data together because results achieved by one agency in reducing the use of drugs may be offset by less favorable results by another agency. For example, increased Customs Service inspections and use of technology to detect drugs being smuggled through ports of entry may cause smugglers to seek other routes; this would put more pressure on drug interdiction activities of other agencies, such as the Coast Guard. Experts say substantiating outcome results through further research and evaluation is an important step in advancing promising drug prevention and treatment approaches. It is also important in helping policymakers to better focus efforts and resources on proven effective drug abuse prevention and treatment programs.

It is too soon to tell whether the measures being developed by ONDCP and each agency participating in implementing the U.S. drug control strategy will be adequate for assessing results. Congressional and agency officials will need to review several years of data before they can assess whether changes in funding or allocation of resources would improve the results being achieved.

Agency Comments

On January 31, 1997, we provided a draft of this report for comment to the Director, Office of National Drug Control Policy; the Secretary of Transportation; and the Commandant of the U.S. Coast Guard. Between February 7 and 14, 1997, officials from ONDCP and the U.S. Coast Guard provided comments on this draft by teleconference. On February 7, 1997, Department of Transportation officials provided their comments by electronic mail. Officials from all three organizations generally agreed with the information presented in the report and provided technical comments that we incorporated where appropriate.

We are sending copies of this report to the Ranking Minority Members of your Subcommittees, the Director of ONDCP, the Secretary of Transportation, and the Commandant of the U.S. Coast Guard. We will also make copies available to others upon request.

The major contributors to this report are listed in appendix IV. If you or your staffs have any questions on this report, please call me on (202) 512-8777.

Norman J. Rabkin
Director, Administration
of Justice Issues

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Abbreviations

ATP	Adolescent Transitions Program
CSAP	Center for Substance Abuse Prevention
CSAT	Center for Substance Abuse Treatment
DEA	Drug Enforcement Administration
DOJ	Department of Justice
FBI	Federal Bureau of Investigation
GPRA	Government Performance and Results Act
HHS	Department of Health and Human Services
HIV	Human Immunodeficiency Virus
INS	Immigration and Naturalization Service
IPR	interpersonal relations
IOM	Institute of Medicine
NIDA	National Institute on Drug Abuse
NIJ	National Institute of Justice
ONDCP	Office of National Drug Control Policy
SAMHSA	Substance Abuse and Mental Health Services Administration
SFP	Strengthening Families Program
SSDP	Seattle Social Development Project
TASC	Treatment Alternatives to Street Crime
VA	Department of Veterans Affairs

Background

The United States has developed a multifaceted drug control strategy intended to reduce the supply and demand for illegal drugs. The 1996 U.S. drug control strategy includes five goals: (1) motivate America's youth to reject illegal drugs and substance abuse; (2) increase the safety of U.S. citizens by substantially reducing drug-related crime and violence; (3) reduce health, welfare, and crime costs resulting from illegal drug use; (4) shield America's air, land, and sea frontiers from the drug threat; and (5) break foreign and domestic drug sources of supply. For fiscal year 1997, the President requested $15.1 billion for programs designed to attain the strategy's goals. Table I.1 lists federal drug control spending by function for fiscal years 1995 to 1997.

Table I.1: Federal Drug Control Spending by Function, FYs 1995-1997

Dollars in millions

	FY 1995 actual	FY 1996 estimate[a]	President's FY 1997 request	FY 1996-1997 change Amount	Percent
Drug function					
Criminal justice system	$6,545.4	$7,105.1	$7,790.5	$685.4	9.6%
Drug treatment	2,692.0	2,679.4	2,908.7	229.3	8.6%
Drug prevention	1,559.1	1,430.1	1,591.6	161.5	11.3%
International	295.8	319.5	400.5	81.0	25.4%
Interdiction	1,280.1	1,339.4	1,437.2	97.8	7.3%
Research	542.2	569.6	559.2	-10.4	-1.8%
Intelligence	336.6	340.4	375.9	35.4	10.4%
Total	**$13,251.2**	**$13,783.5**	**$15,063.5**	**$1,280.0**	**9.3%**
Function areas					
Demand reduction[b]	$4,691.9	$4,571.9	$4,970.6	$398.7	8.7%
Percentage	35%	33%	33%		
Domestic law enforcement	$6,983.3	$7,552.8	$8,255.3	$702.5	9.3%
Percentage	53%	55%	55%		
International	$295.8	$319.5	$400.5	$81.0	25.4%
Percentage	2%	2%	3%		
Interdiction	$1,280.1	$1,339.4	$1,437.2	$97.8	7.3%
Percentage	10%	10%	10%		
Total	**$13,251.2**	**$13,783.5**	**$15,063.5**	**$1,280.0**	**9.3%**
Supply/demand split					
Supply	$8,559.2	9,211.6	$10,093.0	$881.4	9.6%
Percentage	65%	67%	67%		

(continued)

Dollars in millions

	FY 1995 actual	FY 1996 estimate[a]	President's FY 1997 request	FY 1996-1997 change	
				Amount	Percent
Demand	$4,691.9	4,571.9	$4,970.6	$398.7	8.7
Percentage	35%	33%	33%		
Total	**$13,251.2**	**13,783.5**	**$15,063.5**	**$1,280.0**	**9.3%**
Demand components					
Prevention (w/research)	$1,738.7	$1618.6	$1,783.3	$164.7	10.2%
Treatment (w/research)	$2,953.2	$2,953.3	$3,187.3	$234.0	7.9%
Demand research, total	$440.8	$462.4	$470.2	$7.9	1.7%

Note: Detail may not add to totals due to rounding.

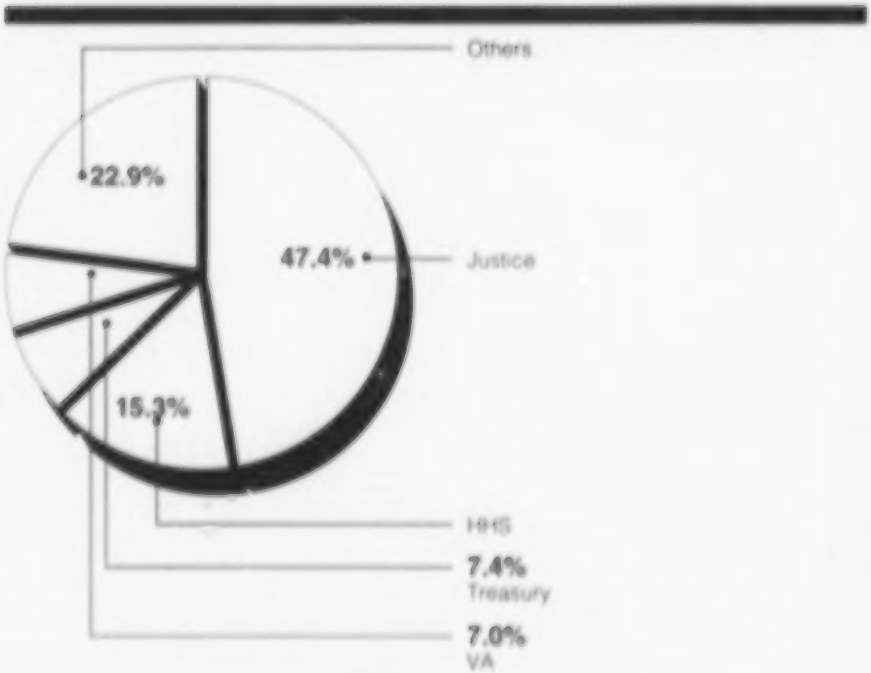
[a]Includes the administration's proposed adjustments to fiscal year 1996 continuing resolution levels.

[b]Demand reduction refers to any activity intended to reduce the demand for drugs such as through drug abuse treatment, education, prevention, research, and rehabilitation. Supply reduction refers to any enforcement activity intended to reduce the supply or use of drugs, such as through international drug control initiatives, foreign and domestic drug enforcement intelligence, interdiction of drugs destined for the United States, and domestic law enforcement, including enforcement directed at users.

Source: The National Drug Control Strategy, 1996, ONDCP.

Figure I.1 shows the level of federal involvement in drug control efforts.

Figure I.1: Percentage of Drug Control Funds by Agency, 1997



Source: ONDCP

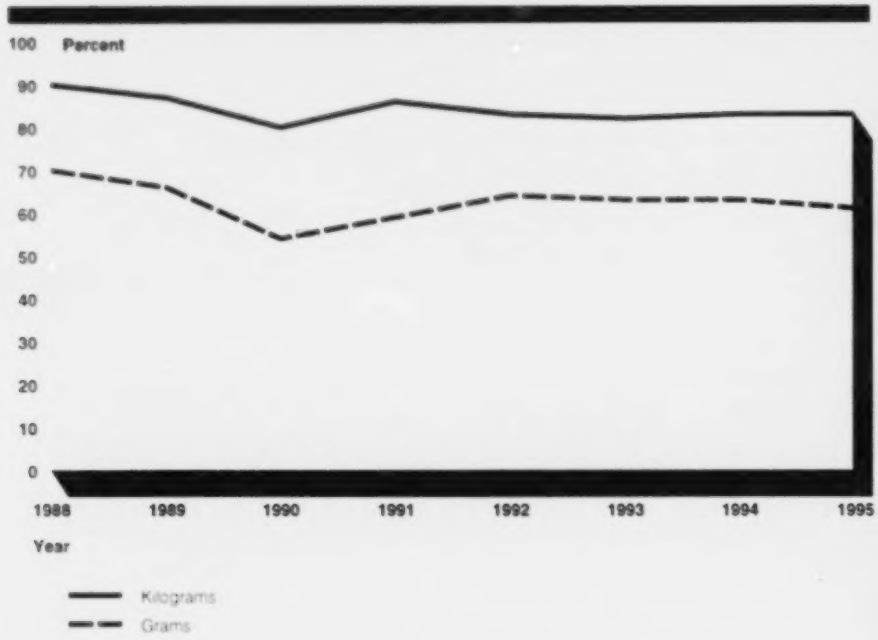
According to the DEA Administrator, if demand does not change, a depressed price and elevated purity often signal an increased availability of a specific drug; on the other hand, increased price and declining purity indicate decreased availability of that drug. As can be seen in table I.2, the lower end price of cocaine remained the same, while the higher range price increased from 1988 to 1992. But from 1993 to 1995, the price of cocaine declined. Figure I.2 shows that the purity of cocaine has remained relatively constant since 1988.

Table I.2: U.S. Retail Price Range for 1 Kilogram of Cocaine, 1988-1995

Year	National price range
1988	$11,000-$34,000
1989	$11,000-$35,000
1990	$11,000-$40,000
1991	$11,000-$40,000
1992	$11,000-$42,000
1993	$10,500-$40,000
1994	$10,500-$40,000
1995	$10,500-$36,000

Source: DEA and the National Narcotics Intelligence Consumers Committee

Figure I.2: Average U.S. Rate of Purity of Cocaine, 1988-1995



Source: DEA

Illegal drug use—particularly the use of cocaine and heroin—represents a continuing health and safety problem in the United States. While the level

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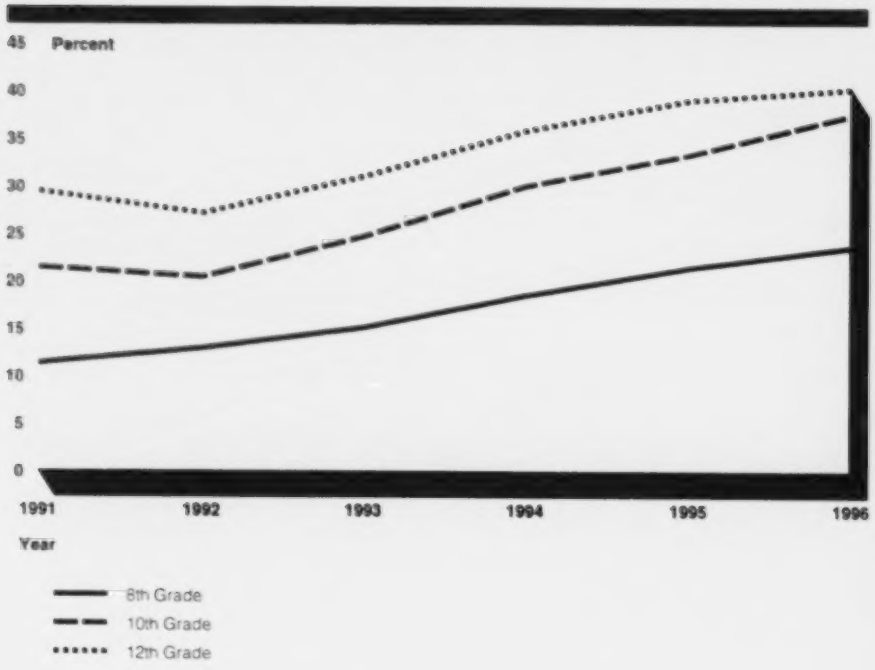
of consumption of illicit drugs has remained relatively stable during recent years, a great deal of concern has arisen from the Monitoring the Future, 1996 survey's findings discussed earlier that drug use by youth in grades 8, 10, and 12 has increased since 1992. According to ONDCP, an upsurge in drug use by teens reflects the need to refocus and reinvigorate prevention efforts.

Figure I.3: Adolescent Illicit Drug Use, 1991-1996



Source: Monitoring the Future, National Institute on Drug Abuse, 1996.

Drug Abuse Prevention and Treatment

Introduction

Drug and alcohol abuse continues to be a major problem facing our society. In 1995, among the general population, about 22.7 million individuals were estimated to have used at least one illicit drug in the past year—17.8 million used marijuana, 3.7 million used cocaine, and 428,000 used heroin.[39] The highest illicit drug use rate among adolescents continues to be their use of alcohol. In 1995, about 74 percent of high school seniors surveyed had consumed alcohol in the past year.[40,41]

From 1992 to 1995, the estimated rate of marijuana use in the general population increased from 7.9 to 8.4 percent. The rate of cocaine use, although still considered to be of epidemic proportions, declined from 2.1 to 1.7 percent. There was a pronounced rise in the drug use rates among school-age youths during this period. The rate of marijuana use by 8th grade students in the past year more than doubled, from 7.2 percent to 15.8 percent; use by 10th graders rose from 15.2 percent to 28.7 percent; and for 12th graders, the rate of marijuana use increased from 21.9 percent to 34.7 percent. The rate of alcohol use remained above 70 percent throughout the period for 12th graders. Increases in students' past-year drug use were also found for 11 other drug types.

To help combat drug abuse and reduce the demand for drugs in the United States, federal, state, and local governments and the private sector fund prevention and treatment programs. From fiscal year 1990 through 1994, federal funding for drug prevention and treatment activities increased from $2.8 billion to $4.4 billion. Combined state, county, and local expenditures increased from about $1.3 billion to about $1.6 billion. Although data on private sector funding are very limited, available sources indicate funding of more than $1 billion for treatment in 1993.[42]

In light of the high prevalence of drug use in the United States and the human and financial investment in fighting drug abuse, congressional members are interested in knowing what drug prevention and treatment strategies are being employed to address the drug use problem. This appendix discusses

[39]National Household Survey on Drug Abuse: Population Estimates 1995, Substance Abuse and Mental Health Services Administration, 1996.

[40]In all states, the purchase and public possession of alcohol beverages by a person who is less than 21 years of age is illegal. Throughout this report, the use of the term "drug abuse" can also include alcohol.

[41]Monitoring the Future, National Institute on Drug Abuse, 1996.

[42]Drug and Alcohol Abuse: Billions Spent Annually for Treatment and Prevention Activities (GAO/HEHS-97-12, Oct. 8, 1996).

- the nature and objectives of drug prevention and treatment,
- the types of prevention approaches currently being used and promising prevention practices for school-age youths,
- the types of cocaine treatment approaches currently being used and promising treatment practices for those abusing or addicted to cocaine, and
- future research initiatives needed to enhance our knowledge base of prevention and treatment effectiveness.

Scope and Methodology

To determine the objectives of drug prevention and treatment, the range of prevention and treatment strategies and approaches being used, and the future research initiatives needed to increase the knowledge base on the effectiveness of prevention and treatment, we identified and reviewed selected literature on drug prevention and treatment research. The documents we reviewed included (1) Institute of Medicine (IOM) publications, (2) the Secretary of the Department of Health and Human Services' (HHS) third triennial report to the Congress on drug abuse research, (3) the National Institute on Drug Abuse's (NIDA) series of research monographs, (4) Substance Abuse and Mental Health Services Administration (SAMHSA) monographs, and (5) relevant government contractor reports as well as journal publications by major experts in drug prevention and treatment.

To identify promising drug prevention approaches for school-age youths, we first conducted a literature search of prevention practices during the period 1990 to 1995, using medical, social, psychological, and educational reference sources. We extracted and reviewed from the drug prevention literature 10 syntheses written by known experts in the field. The authors reviewed and summarized the evidence of promising prevention approaches used in programs for youths. We also reviewed the supporting outcome data provided for each program to determine the level of evidence behind an author's designation of a program as promising. In the syntheses in which data either were not provided or were not adequate, we obtained supplementary information from principal investigators who had implemented the prevention approach. This supplementary information was obtained from journal publications, reports, and working drafts. We cited the drug prevention programs as promising if the approach met one of the following criteria that we developed:

- the group receiving the experimental intervention demonstrated significantly better outcome results than control groups not receiving the approach;[43] or
- in cases where the intervention had no comparison or control group, outcome results were markedly better (by at least 10 percent) than initial baseline scores.

In addition to these criteria, we sought approaches with follow-up periods of at least 6 months. We combined a standardized statistical criterion with our professional methodological judgment in developing the criteria.

To identify promising treatment approaches for cocaine abuse, we used information from our June 1996 report.[44] For that report, we identified studies with current reportable data on two major outcome variables—drug abstinence and treatment retention. We reviewed the treatment literature published between 1991 and 1995; examined Center for Substance Abuse Treatment (CSAT) and NIDA agency records of cocaine-related grants awarded during that time period; and, as necessary, contacted project investigators for additional information.

The approximately 65 cocaine-related grants supported by CSAT were still in progress when the report was being written; neither abstinence nor retention outcome data were available to judge the promise of their ongoing work. Many of the NIDA longitudinal cocaine-supported studies were also in progress. Promising practices, and their supportive findings, were therefore identified from available NIDA abstinence and retention study data, cocaine treatment outcome studies published during the 5-year period, and documents of unpublished results from federal drug agencies. For analytical purposes, we classified the treatment intervention types as either cognitive and behavioral or pharmacological. In making determinations about which treatment approaches proved promising, we gave due consideration to the appropriateness of research design.

This appendix is not intended to provide an exhaustive evaluation of the drug prevention and treatment literature, nor is it to assess the qualitative methodology of each study we reviewed. Rather, the primary objective is to identify drug abuse prevention approaches for school-age youths and

[43]To assess whether the experimental intervention group outcome results were statistically better than those of the control group participants, we determined whether principal investigators used "significance" testing and then assessed the results of those tests. Experimental group findings were judged to be "significantly better" when the probability of this occurrence by chance alone was less than 5 times in 100 ($p < .05$).

[44]Cocaine Treatment: Early Results From Various Approaches (GAO/HEHS-96-80, June 7, 1996).

cocaine abuse or dependency treatment approaches that appear promising and provide illustrative examples of these approaches.

The Nature and Objectives of Drug Prevention and Treatment

In October 1996, we reported that federal, state, county, and local governments and the private sector contribute billions of dollars annually to support drug prevention and treatment activities. The latest data available from the Office of National Drug Control Policy (ONDCP) show that federal funding alone was $4.7 billion in fiscal year 1995. At least 16 federal departments and agencies provide funding for drug abuse prevention and treatment programs. Three departments accounted for 81.9 percent of fiscal year 1995 funding—HHS, the Department of Veterans Affairs (VA), and the Department of Education—provided approximately $2.3 billion, $967 million, and $584 million, respectively.

The federal agencies fund an array of drug abuse prevention and treatment programs for a variety of targeted population groups. For instance, within HHS, SAMHSA's Center for Substance Abuse Prevention (CSAP) sponsors the Community Partnership program, the Community Coalition program, and the High Risk Youth program. The Veterans Health Administration operates a network of substance abuse treatment programs in its medical centers, domiciliaries, and outpatient clinics. And within the Department of Education, the Safe and Drug-Free Schools and Communities Act includes funding to prevent youth violence as well as drug and alcohol use. These and other federal programs provide a broad range of drug abuse prevention and treatment activities and services.

Prevention

The Nature of Prevention Activities

Drug abuse prevention activities focus on the general population as well as individuals who may be at risk for alcohol or other drug problems. These activities include (1) providing information and education that increase knowledge of drug abuse and alternative drug-free lifestyles; (2) teaching skills to resist drug influences, solve problems, and make decisions; (3) developing interventions to control the sale and distribution of illegal drugs; and (4) encouraging communities to implement responses to drug use. Prevention activities can be differentiated, according to NIDA, into three distinct types commonly referred to as universal, selective, and indicated. A description of these types follows.

Universal drug abuse prevention interventions are directed at the general population and employ a variety of integrated activities, including social resistance education in the schools, antidrug media campaigns, parent skills training, antidrug coalitions at the neighborhood level, and antidrug policies at the state and local levels. The objective of the universal strategy is to alter social, psychological, and environmental factors that may influence drug prevalence and drug outcomes at the community level.

Selective drug abuse prevention interventions are directed at individuals or subgroups who are at risk of developing drug abuse behaviors. The objective of a selective prevention intervention is to reduce "risk factors" and enhance "protective factors" related to drug use onset and the progression to abuse and dependence.

Indicated drug abuse prevention interventions are targeted to individuals who use one or more drugs but who do not yet meet diagnostic criteria for a drug disorder. Drug users with mental health disorders may be targeted as well. The objective of indicated interventions is to interrupt the progression from drug use to drug abuse, addiction, and social dysfunctionality.

Goals and Objectives of Prevention Programs

The major goals of drug prevention programs are to prevent or eliminate drug use and to avert drug-related problems (such as sexually transmitted diseases and tuberculosis). But many prevention intervention initiatives also identify and address the "intermediate" factors, which have been found, or are perceived, to be related to drug use. These are often referred to as the "risk" and "protective" factors.

1. Reduction of individual "risk factors" focuses on trying to minimize the negative effect of factors that impinge on one's life that have been shown or theorized to be related to drug use. These factors include availability of drugs, community norms favorable to drug use, extreme economic deprivation, family history of problem drug use, favorable parental attitudes and involvement in problem drug use, early and persistent antisocial behavior, academic failure, alienation and rebellion, and friends who engage in problem behavior.

2. Enhancement of "protective factors" focuses on increasing an individual's resilience in dealing with potentially high-risk situations (such as dysfunctional families, schools, and communities). The drug prevention research field has hypothesized that more resilient individuals are less likely to engage in drug use. Increased resiliency in youths may be

described under seven major factors—optimism, empathy, insight, intellectual competence, self-esteem, direction or mission, and determination and perseverance. The coping or life skills associated with these seven factors are emotional management skills, interpersonal social skills, intrapersonal reflective skills, academic and job skills, ability to restore self-esteem, planning and life skills, and problem-solving ability.

3. Reduction of environmental and societal risk factors focuses on prevention approaches that seek to reduce the availability illegal and nonprescriptive legal drugs (for example, higher penalties for sale and distribution in and around schools).

Prevention programs are conducted in a variety of settings. For school-age youths, drug prevention activities can occur in the classroom, peer support groups, the home setting, and the community (using the media, youth groups, and community leaders), or in a combination of these settings. For adults, drug prevention can be extended to the workplace.

Treatment

The Nature of Treatment Activities

Treatment activities are designed to benefit individuals who have not been exposed to or dissuaded by drug abuse prevention programs and have not been able to abstain or control drug use on their own. Drug treatment traditionally has been reserved for drug abusers, or individuals dependent on drugs who require more intensive therapy, and pharmacological medications. The services drug treatment programs provide may include diagnostic assessment, detoxification, pharmacological dosing, and medical, psychiatric, and psychological counseling and psychotherapy.

Goals and Objectives of Treatment Programs

The major goals of drug treatment programs are to achieve initial client abstinence and then to maintain such abstinence over time. Individual treatment objectives vary by the type of treatment intervention sought and the nature and severity of a client's problem. Common objectives include (1) detoxification, when necessary; (2) use of self-help groups (for example, Alcoholics Anonymous and Narcotics Anonymous) throughout treatment and aftercare; (3) social or personal habilitation or rehabilitation (including a focus on improved health and a reduction in psychiatric disorders and psychological problems); (4) better relations with family and significant others; (5) development of a lifestyle free of drugs; (6) avoidance of others using drugs; (7) taking steps toward the attainment of educational and occupational aspirations; (8) a reduction in

criminal behavior and resolution of legal problems; and (9) improved personal circumstances (including enhanced coping skills, family and social support systems, and ability to provide for basic needs). The longer a client remains in treatment, the greater the possibility of a successful outcome.

Drug treatment can be administered in different ways and in both inpatient and outpatient settings. IOM and others identify four types of treatment modalities in the form of programs and settings.[45] The four modalities—outpatient methadone maintenance, outpatient nonmethadone and drug-free, chemical dependency, and residential therapeutic communities are described as follows:

1. Outpatient methadone maintenance is specifically for the group of clients who are dependent on narcotics, particularly heroin, and who are able to benefit from the use of methadone as a "substitute" drug. Methadone is used to ease withdrawal symptoms, reduce heroin craving, and improve the psychological functioning of the individual.

2. Outpatient nonmethadone and drug-free facilities offer diverse purposes, programs, and staffing. Generally, clients are seen 1 or 2 days a week for individual and group counseling sessions. Self-help groups are thought to be an essential program component. Medication and assistance with educational, vocational, and health and housing concerns are offered in some programs.

3. Chemical dependency programs represent the type of inpatient modality most often assumed by the private sector. Treatment consists of a psychiatric and psychosocial evaluation, a drug education component, individual and group therapy, self-help group participation, and aftercare planning in an intensive outpatient or a residential setting.

4. Residential therapeutic communities incorporate programs that are designed for the severely dependent clients whose social and occupational functioning warrant rehabilitative or habilitative care. Therapeutic communities perceive drug abuse as a deviant behavior that limits one's personality development and is associated with chronic deficits in the individual's social, educational, and economic skills. Reality-oriented group and individual psychotherapy with definitive client roles and responsibilities are provided in a very structured living arrangement. Over

[45]Institute of Medicine, Treating Drug Problems, vol. 1 (Washington, D.C.: National Academy Press, 1990); Research Triangle Institute, Data Tables Comparing Crack and Cocaine Users to Other Drug Users Entering Drug Treatment, unpublished manuscript.

an approximate 6- to 24-month inpatient stay, therapeutic community programs focus on preparing an individual for reentry into society.

The Types of Prevention Approaches Currently Being Used for School-Age Youths

Drug prevention strategies generally include one or more approaches designed to prevent or reduce drug use, some of which include helping participants deal with other problems in their lives. The strategies commonly used have been categorized under five different approaches—information dissemination, affective education, alternative approaches, social influence, and personal and social skills. The social influence and personal and social skills approaches both address psychosocial factors; therefore, for purposes of this report, we refer to these as the "psychosocial" approach. Also, we include another approach—the comprehensive approach—to categorize multicomponent prevention activities involving the participation of two or more social institutions. (See table II.1 for a description of each approach.)

Table II.1: Types of Prevention Approaches

Approach	Strategy
Information dissemination	Provision of factual information on drugs presented through instruction, discussion, audio-visual presentation, display, posters, pamphlets, or group programs
Affective education	Promotes individual's personal and social development with focus on improving one's self-understanding and acceptance, enhancing interpersonal relationships, and attaining needs-satisfaction through existing social institutions
Alternative approaches to drugs	Engagement in alternative activities in nondrug surroundings as a means of limiting one's probability of drug use—such as sports, hobbies, and community service
Psychosocial	Teaching specific skills for resisting drug influences (e.g., familial, peer, and media influences) as well as generic skills for generally coping with life (e.g., problem-solving and decisionmaking skills)
Comprehensive[a]	A multicomponent intervention involving the participation of several social institutions, including the schools, families, community organizations, and the media

[a]The term "comprehensive" has been utilized by IOM, CSAP, and other experts in the field. Yet it can be defined in different ways. IOM and CSAP, for example, have used the term when referring to coordinated, communitywide interventions. The Seattle Social Development Research Group and Oregon Social Learning Center have used the term to refer to the cooperation or interaction of multiple target groups from various social institutions, such as the school, family and neighborhood. Selected references include: Institute of Medicine, Pathways of Addiction: Opportunities in Drug Abuse Research (Washington, D.C.: National Academy Press, 1996), p. 141, and William Hanson, "School-based Substance Abuse Prevention: A Review of the State of the Art in Curriculum, 1980-1990," Health Education Research, 7 (1992), 403-40

Although these prevention approaches or strategies can be used for all ages, they are most often used with youths because youths are very susceptible to peer group and media influences that might encourage negative behaviors. Because youths are apt to experiment with alcohol and drugs, it is important to introduce prevention strategies early in their lives.

Two Prevention Approaches Show Promise Among School-Age Youths

Of the five drug prevention approaches described in table II.1, the psychosocial and comprehensive approaches have shown more promise for reducing drug use and risk factors and for enhancing protective factors among school-age youths. While the three other approaches have not been shown to be consistently effective when used individually, they have been included in promising comprehensive approaches.

Our review of selected literature syntheses identified several prevention programs that had definitive positive outcome results when using the psychosocial and comprehensive approaches as their core prevention strategy. Although the two approaches can be applied in a variety of settings, the programs cited in the research literature we reviewed were school-based or had a family or community focus. HHS and the Department of Education also recognize some of these programs as noteworthy in decreasing drug use and risk factors.

Programs Incorporating the Psychosocial Approach Show Promise

The psychosocial approach appears to have some promise, as evidenced by positive outcome data for the five illustrative programs using this approach in table II.2. Outcome results point to reductions in drug use and risk factors as well as enhanced protective factors.

Table II. 2: Methodology and Results of Illustrative School-Age Prevention Programs

Study	Study description
Psychosocial approaches	
1. Life Skills Training Prevention Program[a]	3-year school-based intervention consisting of 15 7th-grade sessions, 10 8th-grade sessions, and 5 9th-grade sessions
2. Project ALERT[b]	In 20 schools receiving the intervention curriculum, classes taught by teacher alone or by teacher and an older teen; 10 control schools did not receive the curriculum; the curriculum had 11 lessons 8 7th-grade sessions, and 3 8th-grade booster sessions
3. Generic Skills Intervention[c]	15-session curriculum for grade 7 with 8 8th-grade booster sessions
4. Adolescent Alcohol Prevention Trial[d]	4 experimental conditions: normative education and resistance skill training, provided either separately or together
5. Interpersonal Relations Program[e]	InterPersonal Relations (IPR) classes met daily for a full semester (55 minutes per day for 4.5 months)
Comprehensive approaches	
6. Seattle Social Development Project (SSDP)[f]	6-year elementary school intervention consisting of teacher training each year and parent training in grades 1, 2, 3, 5, and 6

Sample design (size)	Setting and target population	Prevention outcome	Investigator affiliation
Randomized trial (n = 3,597)	School-based. 7th-9th graders from 56 New York state schools	At 12th-grade follow-up, 44% fewer treatment students used all 3 gateway drugs once a month or more compared to controls. 66% fewer treatment students used all 3 substances once a week or more	Cornell University, New York, New York
Blocking by district, restricted and randomized assignment of schools (n = more than 4,700)	School-based. 7th- and 8th-grade students from 30 diverse California and Oregon schools	At 15-month follow-up, significantly fewer students in experimental intervention groups anticipated using marijuana in the future compared to controls; experimental subjects also were significantly more likely to believe that marijuana and cigarette use can bring immediate and negative social consequences and result in drug dependence	RAND, Santa Monica, California
Matched assignment (n = 757)	School-based. 7th and 8th graders from 6 New York City schools with more than 85% minority student bodies	At 9th-grade follow-up, drinking frequency, amount of alcohol consumed, and intention to drink beer or wine were lower in the 2 experimental groups relative to controls; students in experimental groups used drug-refusal skills more often than controls	Cornell University, New York, New York
Random assignment (n = 3,011)	School-based. 7th-grade students in 12 Los Angeles and Orange County junior high schools	At 1-year follow-up, classes receiving normative education had significantly reduced rates of marijuana use and alcohol and cigarette consumption relative to controls; average increase in initial incidence of marijuana use for normative group was 64.5% less than controls, 22.5% less in the case of alcohol	Wake Forest University, Winston-Salem, North Carolina
High-risk students assigned first come first served to special IPR experimental training; control group matched to experimental group (n = 146)	School-based. high-risk 9th-12th graders from Northwest urban high school serving predominantly white, middle-class students	IPR program participants demonstrated significantly decreased drug use, fewer school disciplinary actions, fewer problems with family and friends, lower dropout rate, and higher grade point average relative to controls	University of Washington, Seattle, Washington
School assignment, student randomization (n = 596 students completing high school the 6th year follow-up)	School-based. 1st-4th graders in Seattle public schools in high-crime-rate areas, their teachers and parents	By 6 year follow-up, group receiving intervention demonstrated significantly greater school commitment and attachment, fewer school problem behaviors, less alcohol use, less violent behavior, and fewer sexual partners compared to controls	University of Washington, Seattle, Washington

(continued)

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Study	Study description
7. Midwestern Prevention Project, known locally as Project Star or I-Star[a]	Social influence approach school-based component plus media, parent, and community organization programs and drug use policy changes. 11-13-session school program followed by 5 session boosters
8. Safe Haven Program (a cultural version of the Strengthening Families Program, SFP)[f]	Focus of the intervention for the 6 to 12 year old children was on risk and protective factors. The parental and adult family intervention targeted both drug use and family management, communication issues in 12 weekly structured sessions
9. Adolescent Transitions Program (ATP)	4 experimental conditions: parent focus (developing effective, noncoercive family management practices), teen focus (enhancing adolescent self-regulation, competence), parent and teen focus, and self-directed group that received only the materials. 12 weekly 90-minute sessions
10. Project Northland	Experimental curricula consisting of 3 years of parental involvement and education programs, behavioral curricula, peer participation, and community task force activity

Sample design (size)	Setting and target population	Prevention outcome	Investigator affiliation
Two-group design (n = 5,400 Kansas City, 3,192 Indianapolis)	School- and community-based: 6th or 7th graders in 50 Kansas City schools and 57 Indianapolis schools	20%-40% net change in 2 drugs over 3 years for program participants	University of Southern California, Los Angeles, California
Quasi-experimental design, nonequivalent comparison group (n = 88)	Family-focused: 6- to 12-year-old children substance using parents were admitted to a Detroit drug treatment center; effectiveness of the Safe Haven Program compared families of low and high substance use	At follow-up, parents in both the high and low substance abuse groups reported significant decreases in drug use for themselves and their families; children in high substance abuse group showed significant reductions in school problems, aggression, delinquency, and hyperactivity	University of Utah, Salt Lake City, Utah; Detroit City Health Department, Michigan
Random assignment to experimental intervention, quasi-experimental control (n = 158)	Family-focused and neighborhood based: 6th- to 8th-grade high-risk adolescents and their families	At 1-year follow-up, mothers in parent and teen group reported significantly less family conflict than controls and significant reductions in adolescent problem behavior; teen focus intervention had negative effect	Oregon Social Learning Center, Eugene, Oregon
20 school districts blocked by size and randomized to either the experimental or the control condition (n = 1,901)	Communitywide: 6th-8th graders and their communities in mostly rural, lower middle-class Minnesota	Students in experimental intervention districts had significantly lower tendency to use alcohol by the end of 8th grade; among baseline nonusers of alcohol, percentage of students reporting marijuana and cigarette use was also significantly lower in the intervention districts at 8th-grade follow-up; intervention group significantly more likely to report being able to resist alcohol at a party or dance	University of Minnesota, Minneapolis, Minnesota

[a]Sources for the Life Skills Training Prevention Program are Gilbert J. Botvin, "Preventing Adolescent Drug Abuse Through Life Skills Training: Intervention Approach and Evaluation Results," Community Epidemiology Work Group (CEWG), June 1996, 451-459; and Gilbert J. Botvin et al., "Long-term Follow-up Results of a Randomized Drug Abuse Prevention Trial in a White Middle-Class Population," Journal of the American Medical Association, 273:14 (1995), 1106-12.

[b]The source for Project ALERT is Phyllis L. Ellickson, Robert M. Bell, and Ellen R. Harrison, "Changing Adolescent Propensities to Use Drugs: Results from Project ALERT," Health Education Quarterly, 20:2 (summer 1993), 227-42.

[c]The source for the Generic Skills Intervention program is Gilbert J. Botvin et al., "Effectiveness of Culturally Focused and Generic Skills Training Approaches to Alcohol and Drug Abuse Prevention Among Minority Adolescents: Two-Year Follow-Up Results," Psychology of Addictive Behaviors, 9:3 (1995), 183-94.

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[d]The source for the Adolescent Alcohol Prevention Trial is William B. Hansen and John W. Graham, "Preventing Alcohol, Marijuana, and Cigarette Use Among Adolescents: Peer Pressure Resistance Training Versus Establishing Conservative Norms," Preventive Medicine, 20 (1991), 414-30.

[e]The source for the Interpersonal Relations Program is Leona L. Eggert et al., "Effects of a School-Based Prevention Program for Potential High School Dropouts and Drug Abusers," International Journal of the Addictions, 25:7 (1990), 773-801.

[f]The sources for the Seattle Social Development Project are an unpublished document by J. David Hawkins et al. entitled "Promoting Academic Success and Preventing Crime in Urban America: Six-Year Follow-Up Effects of the Seattle Social Development Project" and a set of unpublished 6-year follow-up documents from Hawkins et al. provided to GAO on November 28, 1996. The principal investigator of the SSDP considers this program comprehensive because it is a cooperative program that targets students, parents, and teachers and seeks to change the entire school environment.

[g]The sources for the Midwestern Prevention Project are an unpublished draft by Mary Ann Pentz entitled "Preventing Drug Abuse Through the Community: Multi-component Programs Make the Difference" and Mary Ann Pentz's "Benefits of Integrating Strategies in Different Settings."

[h]Although the program might not necessarily include several social institutions, the Safe Haven Program follows a comprehensive, family-focused curriculum in that it includes three components: (1) children's skills training; (2) parent training; and (3) if needed, community support services such as child care, meals, transportation, and support with basic needs (groceries and clothing). The source for the Safe Haven Program is G. Aktan, K. L. Kumpfer, and C. Turner, "The Safe Haven Program: Effectiveness of a Family Skills Training Program for Substance Abuse Prevention With Inner City African-American Families," International Journal of the Addictions, 31 (1996), 158-75.

[i]While The ATP program does not necessarily involve a multiple of social institutions, it is a family-focused program that has a comprehensive strategy because it includes parents and adolescents as well as community wraparound services if needed, such as family therapy, case management, transportation, and food services. The source for the Adolescent Transitions Program is Thomas J. Dishion and David W. Andrews, "Preventing Escalation Problem Behaviors with High-Risk Young Adolescents: Immediate and 1-Year Outcomes," Journal of Consulting and Clinical Psychology, 63:4 (1995), 538-48.

[j]The source for Project Northland is Cheryl L. Perry et al., "Project Northland: Outcomes of a Communitywide Alcohol Use Prevention Program During Early Adolescence," American Journal of Public Health, 86:7 (1996), 956-65.

Illustrations of successful psychosocial programs include the Life Skills Training Program[46] and the Adolescent Alcohol Prevention Trial.[47] Three-year follow-up results of a randomized trial of more than 3,500 7th to 9th grade students showed 66 percent fewer program participants using three drugs (alcohol, tobacco, and marijuana) at least once a week,

[46]Gilbert J. Botvin, "Preventing Adolescent Drug Abuse Through Life Skills Training: Intervention Approach and Evaluation Results," Community Epidemiology Work Group (CEWG), June 1996, 451-459; and Gilbert J. Botvin et al., "Long-term Follow-up Results of a Randomized Drug Abuse Prevention Trial in a White Middle-Class Population," Journal of the American Medical Association, 273:14 (1995), 1106-12.

[47]William B. Hansen and John W. Graham, "Preventing Alcohol, Marijuana, and Cigarette Use Among Adolescents: Peer Pressure Resistance Training Versus Establishing Conservative Norms," Preventive Medicine, 20 (1991), 414-30.

compared with control group participants not receiving the intervention. A 1-year follow-up of approximately 3,000 California 7th graders participating in the Adolescent Alcohol Prevention Trial demonstrated that the increase in the initial incidence of marijuana use for the experimental group was 65-percent less than control group participants and 23-percent less than control group participants for initial alcohol use.

Common features of these programs include increasing awareness of the social influences that promote drug use, modifying normative expectations concerning drug use, teaching skills for resisting drug use pressures, and teaching more generic personal and interpersonal problem-solving skills. All the programs we cite as using the psychosocial approach are delivered in the school setting and target students in grades 7 through 12.

Programs Incorporating the Comprehensive Approach Show Promise

The comprehensive approach also appears to show some promise, as illustrated by the five programs using this approach (see table II.2). In one program, the Seattle Social Development Project,[48] 6-year follow-up results demonstrated that elementary school students participating in the full parent-teacher intervention had significantly fewer annual school problem behaviors than control group participants (4.77 problems versus 3.36 problems), drank less alcohol (15 percent of experimental subjects drank 10 times per year or more compared with 25 percent for control group participants), had a lower lifetime prevalence of violent delinquency (60 percent versus 48 percent), and had fewer sexual partners (50 percent versus 62 percent.) Likewise, in the Midwestern Prevention Project (also known as Project Star or I-Star)[49] 3-year follow-up results demonstrated a 20-to 40-percent net change in two drugs for program participants.

While some of the multicomponent interventions are centered on a school setting, others tend to be family focused and address both parent and child behaviors. For example, the Safe Haven Program achieved reductions in family drug use as well as significant student reductions in school problem behavior, aggression, and delinquency.

[48]J. David Hawkins and others, "Promoting Academic Success and Preventing Crime in Urban America: Six-Year Follow-Up Effects of the Seattle Social Development Project" and a set of unpublished 6-year follow-up documents from Hawkins and others provided to us on November 28, 1996.

[49]Mary Ann Pentz,"Preventing Drug Abuse Through the Community: Multi-Component Programs Make the Difference" and Mary Ann Pentz "Benefits of Integrating Strategies in Different Settings," in A. Elster, S. Panzarine, and K. Holt (eds.), American Medical Association State of the Art Conference on Adolescent Health Promotion Proceedings: National Center for Education in Maternal and Child Health, Arlington, VA, 1993, pp. 15-34.

Common features of programs using a comprehensive approach included multistrategies to target multiple aspects of youths' lives, such as the individual, family, peer group, school, and community. We discussed the importance of comprehensive approaches in community-based adolescent drug prevention programs in our January 1992 report.[50] Although no definitive evidence was available at the time to demonstrate the effectiveness of the community prevention programs we reviewed, we reported that the comprehensive strategy was a feature present in the most promising programs or at least those that appeared to be making more headway than others.[51] The comprehensive approaches addressed multiple dimensions of youths' lives (such as the individual, family, peer group, school, and community) and used a variety of services.

Federal Agencies Recognize Programs as Noteworthy

NIDA and CSAP, within HHS, and the Department of Education recognized as noteworthy several of the drug prevention programs we cite from the literature as having positive outcome results (for example, the Adolescent Alcohol Prevention Trial, Life Skills Training, the Midwestern Prevention Project, and the Seattle Social Development Project). The agencies recognized these programs because they have either demonstrated decreases in drug use and the risk factors that lead to drug use or they have shown an increase in the protective factors promoting drug-free lifestyles. In addition to the programs we cite in table II.2, numerous other programs (such as Project PRIDE, GAPS, and the Youth Gang Drug Prevention Program) have been cited as effective or exemplary in reducing risks for drug use among adolescents. However, according to NIDA, some of these science-based drug abuse prevention interventions and principles are not being widely used in schools and communities across the country.

The Types of Approaches Currently Being Used to Treat Cocaine Addiction

Drug treatment strategies have a common goal of eliminating, or at least reducing, an individual's drug abuse. The strategies in use incorporate various approaches and modalities as a means of treating drug abusers or drug-dependent individuals. Although different approaches have been used, TOM has adopted a paradigm that distinguishes drug abuse treatment

[50] Adolescent Drug Use Prevention: Common Features of Promising Community Programs (GAO/PEMD-92-2, Jan. 16, 1992).

[51] CSAP is currently conducting a national evaluation of the Community Partnership Demonstration Program the agency supports. According to CSAP, national results of this effort should be available in 1998.

approaches as falling under the rubric of pharmacotherapy or psychosocial treatment.

Pharmacotherapies involve the use of medications to deal with client overdose, detoxification, dependence, and relapse prevention. Methadone, for example, is the prime pharmacotherapy determined to be useful in the treatment of heroin. However, none of the major medications tested have proven effective consistently in the treatment of cocaine.

Psychosocial treatment includes counseling, different forms of psychotherapy, cognitive skill development, and contingency management. Counseling is oriented toward the effective management of specific, concrete problems, while psychotherapy attempts to help a client deal with more dysfunctional cognitive and behavioral processes. The use of acupuncture represents a new strategy in the treatment of drug addiction.

Research suggests that psychosocial treatment offers a promising approach to treating cocaine abuse and dependency. Within the psychosocial treatment rubric, cognitive and behavioral therapies are showing promise in cocaine treatment research. As we reported in June 1996, data from a review of the literature show positive results in the use of three cognitive and behavioral approaches to cocaine treatment.[32] Because cocaine therapies are still in their early stages of development, treatment outcome results cannot be generalized to all cocaine users.

Three Cognitive-Behavioral Treatments Show Promise in Outpatient Settings

Early research indicates that relapse prevention, community reinforcement and contingency management, and neurobehavioral therapy are potentially promising cocaine-addiction treatment approaches for cocaine abusers and cocaine-dependent clients. These approaches appear to promote extended periods of client abstinence and treatment retention in outpatient treatment settings. Table II.3 provides an overview of cognitive and behavioral study methodologies and results.

[32] Cocaine Treatment: Early Results From Various Approaches (GAO/HEHS-96-80, June 7, 1996).

Table II.3: Methodology and Results of Illustrative Cognitive-Behavioral Studies

Study group (publication date)	Study period
Relapse prevention	
1. Carroll and others (1994)[a]	12 weeks
2. Carroll and others (1991)[b]	12 weeks
3. Washton and Stone-Washton (1993)[c]	About 28 weeks
4. Wells and others (1994)[d]	24 weeks
Community reinforcement and contingency management	
5. Higgins and others (1991)[e]	12 weeks

Sample design (size)	Client diagnosis/demographics	Treatment outcome	Investigator affiliation
Random (n = 121)	Clients met criteria for cocaine dependence average age: 29 male: 79% white: about 50% unemployed: about 40% single/divorced: about 70% at least high school graduate: about 80%	Cocaine-abstinent at least 70% of the time in treatment	Yale University, New Haven, Connecticut
Random (n = 42)	Clients met criteria for both cocaine abuse and dependence average age: 27 male: 67% white: 67% average years of education: 13	54% of high-severity cocaine users were able to attain at least 3 weeks of continuous abstinence; only 9% of high-severity cocaine users receiving standard psychotherapy could achieve this	Yale University, New Haven, Connecticut
Consecutive admissions (n = 60)	Clients met criteria for severe psychoactive drug dependence (85% were cocaine addicts) average age: about 35 male: about 80% white: about 70% employed: about 90%	More than 60% abstinent from cocaine during 6-to- 24-month follow-up period	Washton Institute, New York, New York
Alternative assignment (n = 110)	Cocaine was primary drug of choice average age: 29 male: 64% white: 84% employed full time for past 3 years: 68% average years of education: 13	Average number of days of cocaine use cut by 71% within 6 months	University of Washington, Seattle, Washington
Consecutive admissions (n = 25)	Clients met criteria for cocaine dependence average age: 29 education ≥12 years: 46% employed: 62% single: 54%	46% were continuously abstinent from cocaine for 8 treatment weeks	University of Vermont, Burlington, Vermont

(continued)

Study group (publication date)	Study period
6. Higgins and others (1993)[	24 weeks
Contingency management only	
7. Silverman and others (1994, 1995)[	12 weeks
Neurobehavioral therapy	
8. Shoptaw and others (1994)[	12 months
9. Rawson and others (1993)	6 months
10. Rosenblum and others (1994)	6 months
11. Magura and others (1994)[	6 months

Sample design (size)	Client diagnosis/demographics	Treatment outcome	Investigator affiliation
Random (n = 38)	Clients met criteria for cocaine dependence average age: 29 male: 89% white: 100% unmarried: 89% completed high school: 63% employed: 42%	42% were continuously abstinent from cocaine for 16 treatment weeks	University of Vermont, Burlington, Vermont
Frequency of cocaine- positive urine during initial 5 weeks of methadone therapy (n = 37)	Clients met criteria for heroin and cocaine dependence average age: 36 black: 26% married: 16% completed at least high school: 74% employed full time: 47%	Nearly 50% of the clients receiving vouchers for cocaine-free urine remained continuously abstinent from cocaine for 7 to 12 weeks	Johns Hopkins University, Baltimore, Maryland
Random (n = 146)	Clients met criteria for stimulant abuse or dependence average age: 31 male: 64% white: 63% Hispanic: 25% average years of education: 13 unmarried: 78%	36% remained continuously abstinent from cocaine for at least 8 treatment weeks; 38% were abstinent from cocaine at 6-month follow-up	Matrix Institute, Los Angeles, California
Open trial (n = 496)	Cocaine-using clients average age: 30 male: 74% white: 76% average years of education: 14 single: 54%	At least 40% at two treatment sites remained continuously abstinent from cocaine through 6 months of treatment	Matrix Institute, Los Angeles, California
Random (n = 77)	Methadone clients who met criteria for cocaine dependence age 24 to 43: 87% Hispanic: 64% black: 31% unemployed: 77% married/common law: 38% completed at least high school: 42%	Clients attending 3 to 19 sessions reduced past-month cocaine use by 5%; those attending 85 to 133 sessions reduced past-month cocaine use by 60%	National Development and Research Institutes, Inc., New York, New York

[a]The source for Carroll and others is Kathleen Carroll et al., "Psychotherapy and Pharmacotherapy for Ambulatory Cocaine Abusers," Archives of General Psychiatry, 51 (1994), 177-87.

[illegible]

[illegible]

[illegible]

follow-up periods as well. Client retention results also appear to be favorable. For example, cocaine-dependent clients participating in a 12-week Yale University program[13] focusing on relapse prevention were able to remain abstinent from cocaine at least 70 percent of the time while in treatment. A year after treatment, gains were still evident: clients receiving relapse prevention treatment and a placebo medication were reported to have used cocaine, on average, fewer than 3 days in the past month.

Positive outcome results were also found in a program conducted by the Waldron Institute in New York:[14] more than 60 percent of the primarily middle-class, cocaine-addicted clients attending the program were abstinent from cocaine during the 6- to 24-month follow-up period. Similarly, in the Seattle area,[15] cocaine-using clients cut their average number of days of cocaine use by 71 percent within 6 months.

Among high-severity cocaine addicts participating in another Yale program,[16] 54 percent receiving relapse prevention therapy were able to attain at least 3 months of continuous abstinence, while only 9 percent of those receiving the interpersonal psychotherapy could remain abstinent for that period of time.

Retention rates of clients in programs were also favorable: 67 percent of the relapse prevention clients completed the entire 12-week Yale program, and more than 70 percent completed the Waldron program.

Community Reinforcement and Contingency Management

Community reinforcement and contingency management programs are intended to help the client achieve initial abstinence as well as an extended drug-free lifestyle. The therapy consists of several key community-oriented components, including the participation of a client's family member or friend in the treatment process; management interventions

[13] Kathleen [illegible] et al., "Psychotherapy and Pharmacotherapy for Ambulatory Cocaine Abusers," Archives of General Psychiatry, 51 (1994), 177-87.

[14] Arnold Washton and Nanette Stone Washton, "Outpatient Treatment of Cocaine and Crack Addiction: A Clinical Perspective," National Institute on Drug Abuse Research Monograph 61 (Rockville, Md.: National Institute on Drug Abuse, 1985), pp. 17-28.

[15] Elizabeth Wells et al., "Outpatient Treatment for Cocaine Abuse: A Controlled Comparison of Relapse Prevention and Twelve-Step Approaches," American Journal of Drug and Alcohol Abuse, 20 (1994), 1-17.

[16] Kathleen [illegible] et al., "A Comparative Trial of Psychotherapies for Ambulatory Cocaine Abusers: Relapse Prevention and Interpersonal Psychotherapy," American Journal of Drug and Alcohol Abuse, 21 (1995), 335-87.

or rewards for drug abstinence; employment counseling when needed; and the encouragement of client participation in recreational activities as pleasurable, healthy alternatives to drug use. Community reinforcement and contingency management therapy teaches clients about the consequences of their actions and aims to strengthen family and social ties.

Almost half (46 percent) of the cocaine-dependent clients participating in a 12-week community reinforcement and contingency management program at the University of Vermont[17] were able to remain continuously abstinent from cocaine through 2 months of treatment. When the program was extended to 24 weeks,[18] 42 percent of the participating cocaine-dependent subjects were able to achieve 4 months of continuous abstinence. By comparison, only 5 percent of those in the control group receiving drug abuse counseling alone could remain continuously abstinent for the entire 4 months.

A year after clients began treatment, community reinforcement and contingency management effects were still evident—65 to 74 percent of those in the community reinforcement group reported 2 or fewer days of cocaine use in the past month. Only 45 percent of those in the control group achieved such gains.

Contingency management was also studied independently in an inner-city Baltimore program.[19] Positive results were found when tying the 12-week voucher reward system to cocaine drug testing. Nearly half of the cocaine-abusing and cocaine-dependent clients (who were also heroin users) given vouchers for cocaine-free urine test results were able to remain continuously abstinent for 7 to 12 weeks. Among clients receiving vouchers unpredictably—not tied to urine test results—only one client achieved abstinence for more than 2 weeks.

[17]Stephen Higgins et al., "A Behavioral Approach to Achieving Initial Cocaine Abstinence," American Journal of Psychiatry, 148:9 (1991), 1218-24.

[18]Stephen Higgins et al., "Achieving Cocaine Abstinence With a Behavioral Approach," American Journal of Psychiatry, 150:5 (1993), 763-69.

[19]K. Silverman et al., "Differential Reinforcement of Urinalysis Monitoring Cocaine Abstinence in Methadone Patients," in L. Harris (ed.), Problems of Drug Dependence 1993: Proceedings of the 55th Annual Scientific Meeting, The College on Problems of Drug Dependence, National Institute on Drug Abuse Research Monograph 132 (Rockville, Md.: National Institute on Drug Abuse Research Monograph, 1993), p. 337; and K. Silverman et al., "Cocaine-Based Reinforcement of Cocaine Abstinence Behavior in Methadone-Maintenance Patients," in L. Harris (ed.), Problems of Drug Dependence 1993: Proceedings of the 55th Annual Scientific Meeting, The College on Problems of Drug Dependence, National Institute on Drug Abuse Research Monograph, in press. Also cited in Office of Applied Studies, SAMHSA, 97 and 98.

Client retention in treatment programs was also high. Within the Vermont community reinforcement and contingency management group, 85 percent of the clients completed the 12-week program, compared with only 42 percent of those in the 12-step drug counseling control group. The 24-week program was completed by about five times as many clients in the community reinforcement group as those receiving drug counseling therapy (58 percent versus 11 percent).

Neurobehavioral Therapy

Neurobehavioral therapy is a comprehensive, [illegible] outpatient treatment approach that includes individual therapy, drug education, client stabilization, and self-help group involvement. Five major stages of recovery are distinguished during the treatment process with emphasis on addressing the client's behavioral, emotional, cognitive, and relational problems at each stage of recovery.

Several programs have demonstrated that a neurobehavioral therapeutic approach can also be effective in promoting cocaine abstinence and treatment retention. Thirty-six percent of the cocaine-abusing and cocaine-dependent clients participating in a neurobehavioral therapy program through the Matrix Institute in California[1] succeeded in remaining continuously abstinent from cocaine for at least 8 consecutive weeks while in treatment. Follow-up results obtained 6 months after treatment entry showed that 38 percent of these clients still tested drug free. In a separate examination of two neurobehavioral outpatient treatment sites,[2] at least 40 percent of the cocaine clients in each site remained continuously abstinent through the entire 6-month course of therapy.

Given the high rate of cocaine use among methadone clients, the neurobehavioral model was adapted in New York for use among methadone clients meeting the diagnostic criteria for cocaine dependence. In an innovative 6-month program,[3] a strong relationship was found between the number of sessions attended and cocaine use reduction. Clients attending 1 to 10 sessions experienced a 5-percent reduction in

[1] [illegible]

[2] [illegible]

[3] [illegible]

cocaine use during the previous month. Those attending 81 to 110 sessions experienced a 58-percent reduction in their past 30-day use of cocaine. In another New York study[37] with cocaine-addicted methadone clients, individuals receiving neurobehavioral treatment demonstrated a significant decrease in cocaine use between entering treatment and 1-month follow-up; the control group showed no statistically significant decrease.

Neurobehavioral retention rates also proved favorable. In the California study of two treatment sites, clients were retained an average of about 5 months and 3 months; in the other California study, the average length of stay for cocaine users was about 8 1/2 months. For the first New York study, a total of 81 percent of the cocaine-dependent methadone clients completed the initial 6-month cocaine treatment regimen.

Additional Research Initiatives Identified for Prevention and Treatment Effectiveness

In our literature search, we found that early research has demonstrated that psychosocial and comprehensive approaches to drug prevention have led to decreased use of drugs among school-age youths as well as reductions in risk factors and the enhancement of protective factors. Relapse prevention, community reinforcement and contingency management, and neurobehavioral therapy have resulted in increased abstinence and extended periods of treatment retention among cocaine-abusing and dependent clients. Although these research results in the 1990s demonstrate promising approaches to drug prevention for school-age youths and treatment for cocaine abuse and dependence, some of these strategies have not been tried, tested, and evaluated in different settings, for different target populations, in various combinations, and over long periods of time. Therefore, there is still a wide array of research initiatives that can be pursued to better understand what promise these approaches hold for effectively preventing, reducing, or treating drug problems. Some of the prevention initiatives suggested by CSAT and cocaine treatment initiatives recommended by cocaine abuse experts follow. Additional treatment initiatives can be found in our 1990 cocaine treatment report.[38]

Prevention

Testing the utility of booster sessions. Prevention training programs frequently take place over the course of only one or two grades (for

[37] Stephen Higgins et al., "Reinforcement Enhances the Cocaine Drug Reduction Outcome: A Preliminary Report," Journal of Addictive Diseases, 14(4):1994, 69-80.

[38] Cocaine Treatment: Early Results From Various Approaches, GAO/HRD-91-46, June 11, 1991.

example, Project ALERT takes place in the 7th and 8th grades). While we have seen that immediate, or short-term, outcome results can be quite promising, positive successes can begin to fade as other negative stimuli and pressures confront the individual. Booster sessions have been shown in limited trials to reinforce initial training sessions and help maintain positive outcome findings. However, because boosters are infrequently used, there is limited supporting evidence on the appropriate content of booster sessions for different age groups. Such knowledge is important for maintaining positive prevention and treatment outcome gains over time.

Determining the mix of program components that yield the most significant outcome results. Outcome results of various promising practices have shown that sizable percentages of the intervention group had not become drug users at the time of the follow-up. Whether these results can be substantially improved with a different mix of prevention approaches and program components remains to be demonstrated.

Evaluating how best to disseminate positive findings to the larger community. In many instances, the promising practice prevention programs supported by the federal government are not being adopted at the local level. Further research is, therefore, necessary to determine how best to market the more effective prevention programs to the user community.

Assessing the types of program approaches that work best for different target populations, in diverse environmental settings, with varying trainers. Many prevention programs have been evaluated only with restricted target audiences (for example, 7th graders in a limited geographic area) by the principal investigator and staff. The extent to which one can generalize from these prevention approaches remains to be determined. Also, further research directed at how these programs can be modified for various target groups, while maintaining the essential components of the intervention program, is needed. In addition, the effect that trainers other than the principal investigator will have on the outcome results will broaden the knowledge base of the widespread applicability of these approaches.

Treatment

Identifying improved additional cognitive/behavioral strategies to reduce relapse. Additional study of the promising treatment approaches is warranted to (1) identify optimal sanction systems to be used in contingency management practices, (2) obtain a more in-depth

understanding of the triggers that promote drug use, and (3) identify the appropriate intensities and durations of treatment necessary for the successful implementation of each of the promising practices. The results of this research could lead to increasing a client's ability to avoid relapse and, thereby, minimize substance abuse third-party payments.

Testing the effectiveness and safety of new medications to prevent or reduce drug intake. Advancement in the pharmacological area rests on a better understanding of brain functioning, the immune system, and actions of the specific illicit drugs. This requires further development and testing of medications to (1) block a drug's toxicity and aid in the withdrawal process, (2) reduce craving for the drug, and (3) inhibit the euphoric "high" induced by the drug. With the craving reduced and the euphoric high diminished, it follows that the use of the drug will decline.

Identifying the necessary components of promising cognitive/behavioral strategies and medications that lead to successful outcomes. This is of particular importance when disseminating these model cocaine treatment practices to the local practitioner. The practitioner may have little time to be trained, may need to streamline use of the approach down to its bare essentials to fit in with other schedule requirements, and may need to know where local adaptations can be incorporated.

Substantiating outcome results through further research and evaluation is an important step in advancing promising drug prevention and treatment approaches. It is also important in helping policymakers to better focus efforts and resources on proven effective drug abuse prevention and treatment programs. In light of federal efforts to establish national goals in an overall drug strategy and to assess results through program performance measures and evaluation, definitive research can be an important prerequisite to focusing and maximizing the use of federal resources.

Coast Guard Has Made Progress, but Challenges Remain in Developing Antidrug Strategic and Performance Plans

A component of the Department of Transportation, the Coast Guard is the federal agency primarily responsible for providing many maritime services and enforcing related laws and regulations. Its staff and equipment are involved in multimissions that range from national security to environmental protection. For fiscal year 1997, the Coast Guard's budget is about $3.84 billion.

The Coast Guard is the lead federal agency for maritime drug interdiction. It shares lead responsibility with the U.S. Customs Service for air interdiction. The Coast Guard's antidrug authority covers domestic waters (12 miles from U.S. shores), including navigable waters of the United States and international waters. Where bilateral agreements permit, the Coast Guard has special jurisdiction in foreign waters. For fiscal year 1997, the Coast Guard estimated that its budget for antidrug activities is about $336 million.

The Coast Guard has made progress in developing antidrug performance measures that conform with GPRA requirements; however, challenges remain. Government Performance and Results Act (GPRA) requires federal agencies[65] to develop two types of plans—a strategic plan[66] by the end of fiscal year 1997 and annual performance plans,[67] the first of which is to cover fiscal year 1999. The Coast Guard's preliminary plans represent a start at incorporating a results-oriented approach to drug interdiction, but as could be expected at this early date, they also reflect a need for additional work. The Coast Guard has recognized three areas that require more attention:

- developing data to measure the results of antidrug actions,
- developing goals and ways of achieving them, and

[65]Under GPRA, "agency" is defined as an executive department, a government corporation, and an independent establishment. The Coast Guard is implementing GPRA in support of the Department of Transportation.

[66]Under GPRA, a strategic plan is the starting point for agencies to set annual goals for programs and to measure the performance of the programs in achieving those goals. GPRA requires each federal agency to develop strategic plans that cover a period of at least 5 years and include the agency's missions statement, identify the agency's long-term strategic goals, and describe how the agency intends to achieve those goals through its activities and though its human, capital, information, and other resources.

[67]The annual performance plan provides the direct linkage between the strategic goals outlined in the agency's strategic plan and what managers and employees do day-to-day. The plan is to contain the performance goals the agency will use to gauge its progress toward accomplishing its strategic goals and identify the performance measures the agency will use to assess its progress.

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- identifying the wide variety of constraints that could influence the Coast Guard's ability to deter the flow of drugs into the United States via maritime routes.

Coast Guard Has Made Progress Toward Implementing GPRA Principles

The Coast Guard has taken action toward implementing the principles of GPRA for its antidrug activities. Under GPRA, the Coast Guard has defined its results-oriented performance goal as "reducing the amount of illegal drugs entering the country through maritime routes by 25 percent over five years." The primary indicator it plans to use in measuring progress toward achieving this goal is data comparing the amount of drugs seized and deterred with the amount bound for the United States via maritime routes. The Coast Guard also plans to use a variety of secondary indicators, such as surveillance coverage and intercept rates.[68]

The preliminary goal and indicators show progress in conforming with certain GPRA principles in that the goal covers a period of 5 years, is results oriented, and is potentially measurable. However, as the next sections discuss, Coast Guard efforts at conforming with the full extent of GPRA is a work in progress.

Measuring Results of Drug Interdiction Presents Challenges

GPRA requires agencies to measure the results of their programs. Measuring the results of drug-control actions is difficult because data on illegal drugs entering the country are more difficult to develop than data on most legal commodities. Without knowing how much was shipped or what got through, the amount of contraband seized does not yield a meaningful measure of effectiveness. The ONDCP-sponsored Semiannual Interagency Assessment of Cocaine Movement has made some progress in developing estimates on the amount of cocaine entering the United States via surface, air, and maritime routes. The Coast Guard is using these data as a primary indicator of its antidrug activities. If reasonably accurate, these data could aid the Coast Guard in measuring the results of its cocaine interdiction program. According to an ONDCP official, ONDCP is working with the intelligence components of federal agencies involved in foreign and domestic drug control programs to develop a comprehensive baseline on heroin production and trafficking. Developing a heroin flow model will be part of this project.

[68]The Coast Guard defines "surveillance coverage" as the area covered divided by the area assigned per 24-hour period. It defines "intercept" as directing the movement of a Coast Guard asset to the scene of an identified target to support the collection of additional information and to take further action, if appropriate. The "interception rate" is defined as the number of intercepts divided by the number of intercepts attempted.

A second factor that makes the measurement of results difficult is that of separating the impact of the Coast Guard's actions from those of other agencies. For example, a decrease in the amount of drugs entering the United States via maritime routes could be the result of greater efforts by other federal agencies to control drugs in the source country, lower domestic demand due to demand-reduction efforts, or better intelligence rather than Coast Guard interdiction efforts. In this regard, Coast Guard officials recognize that measures showing the overall result of the U.S. drug control effort are needed. For example, they stated that placing additional resources in key choke points could result in reduced smuggling activity in one area; however, smugglers may still ship drugs to the United States through other transportation means or routes. Thus, while the actions of one agency may result in success in its area of responsibility, only interagency measures of effectiveness and the attendant data would provide a basis to gauge the success of the total U.S. effort.

Coast Guard Officials Acknowledge That Developing Goals and Methods for Achieving Them Still Need to Be Refined

Coast Guard officials acknowledge that complying with the GPRA requirements to develop results-oriented performance goals and to identify methods of achieving them is a work in progress. Coast Guard officials indicated that the extent to which they reduce illegal drugs entering the United States via maritime routes over the next 5 years is largely dependent on additional resources. Coast Guard officials expect that additional resources and assets will deter smugglers from using a particular route, cause them to stop smuggling entirely, or result in interdiction of about 90 percent of all maritime smuggling traffic in high-risk areas (if the Coast Guard has a "contact rate" of 40 percent with the smuggling community).[32] The officials base this expectation on a 1989 study that collected opinions from convicted smugglers on their view of the risk level that would stop them from smuggling drugs.[33] Coast Guard officials believe that a greater presence and interdiction actions in targeted areas will result in smugglers' perception that the chances of being caught are high, contributing to the deterrence or interdiction of about 90 percent of smuggling traffic in target areas.

[32] According to Coast Guard officials, they have not developed an estimate of the amount of additional resources needed to achieve a 40 percent "contact rate"; however, they plan to determine this amount in the future. The Coast Guard defines "contact rate" as the frequency with which Coast Guard assets make contact with maritime traffic in targeted areas, including interdiction and boarding known or suspected smugglers. According to the Coast Guard, it currently has a contact rate of 12 percent, which results in deterrence or interdiction of 25 percent of smugglers using maritime routes.

[33] "Measuring Deterrence: Approach and Methodology, Rockwell International Special Investigations Inc., Decision Science Applications, Summit Associates, Oct. 27, 1989.

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Information from another study suggests that more resources make a difference in reducing the supply of illegal drugs coming into the United States, but the difference may not be significant. A recent study conducted for ONDCP examined the impact of more resources in disrupting the flow of drugs in the transit zone.[71] The study estimated that smugglers successfully moved about 560 tons of cocaine in the transit zone in 1994, and it evaluated the potential impact of committing an additional $200 million and $500 million to the transit zone. It projected that smugglers would successfully move 470 metric tons (11-percent reduction) in the transit zone under the $200 million option and that they would successfully move 430 metric tons (16-percent reduction) under the $500 million option. According to the study, "given that annual U.S. cocaine consumption is less than 300 tons, the impact of the additional resources in the transit zone does not seem significant enough to affect U.S. drug use."

On the basis of this analysis, the study concluded that "[i]t does not appear that the potential benefit of decreased trafficker smuggling success rate in the transit zone is significant enough to warrant additional resources." The study noted that the federal policy challenge is not only to determine the benefits from direct investment in the transit zone but also to consider whether the investment of a similar level of resources elsewhere in the drug strategy might produce even more benefits.[72] The study, however, contained several methodological limitations, including a low level of confidence in its predictions and a limited scope, such as not analyzing the potential benefits of investing resources in the source countries.

Coast Guard officials generally agreed with the analysis in the study but disagreed with the conclusions. Officials agreed that the amount of cocaine deterred in the transit zone would total about 90 metric tons, or an 11-percent reduction, if an additional $200 million were to be committed to the transit zone. Unlike the study, Coast Guard officials believe that this level of reduction would be a good return on the investment. Officials pointed out that at the time of the study, the additional resources

[71]The National Drug Control Strategy, 1996: Programs, Resources, and Evaluation. Office of National Drug Control Policy, Washington, D.C., pp. 46-52.

[72]The study suggested the following order of priority if funding is increased: (1) increase intelligence, which because of its relative low cost has the greatest leverage and is critical for responding to the maritime threat; (2) improve disruption capability because, without it, law enforcement would be unable to respond to the targets identified by increased and improved intelligence; and (3) increase detection and monitoring to fill geographic gaps and ensure an ability to link intelligence and disruption capability.

($200 million) needed for this level of reduction was only about 1.6 percent of the total federal antidrug budget.

Coast Guard Officials Identify Constraints Other Than Funding That Affect Their Antidrug Efforts

GPRA requires an identification of key factors external to the agency and beyond its control that could significantly affect the achievement of its goals and objectives. In developing its preliminary plans, the Coast Guard has identified the level of resources as a primary factor that influences its ability to achieve the goal that it ultimately establishes. However, identifying and interdicting maritime drug smuggling is affected by other constraints as well. Following are several constraints that the Coast Guard says also affect its antidrug efforts:

- Covering large geographic areas is problematic. When smugglers use maritime routes, they may not ship the drugs directly to the United States, but instead they may ship the drugs to Mexico or Central American countries and then to the United States via land or air routes. An estimated 180 metric tons of cocaine are transported annually from Colombia to Mexico or other Central American countries via maritime routes in the eastern Pacific Ocean, according to the ONDCP-sponsored Semiannual Interagency Assessment of Cocaine Movement. Coast Guard officials stated that this is an area of concern because success in deterring drugs in the Caribbean could result in more smuggling activity in the Pacific. Coast Guard officials noted that unlike the Caribbean, where specific routes and choke points have been identified, interdiction and deterrence in the eastern Pacific presents greater challenges because of the size of the area.
- Sovereignty constraints. Coast Guard officials cited sovereignty issues with foreign flag vessels as another factor that complicates their antidrug efforts. Coast Guard officials stated that bilateral maritime counternarcotic agreements are being sought with countries such as Colombia, Jamaica, Mexico, Barbados, and Nicaragua.[7] According to Coast Guard officials, these agreements provide them with greater flexibility to carry out their antidrug activities. Such agreements outline the criteria for boarding and pursuing foreign flag vessels. Also, they may authorize the Coast Guard to fly over foreign airspace, to order suspect aircraft to land in the host nation, to investigate suspect vessels in foreign waters, or authorize the Coast Guard to conduct other law enforcement activities, such as boardings, in foreign waters.

[7]By December 1996, antidrug bilateral agreements had been signed with 16 countries: Antigua and Barbuda, Bahamas, Belize, Dominica, Dominican Republic, Grenada, Haiti, Netherlands Antilles, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent/Grenadines, Trinidad and Tobago, Turks and Caicos, United Kingdom, and Venezuela.

- Increasing use of technology by smugglers. Coast Guard officials also noted that smugglers are using more sophisticated means to conceal and transport drugs, such as the use of global positioning systems and camouflaged vessels to avoid detection. According to Coast Guard officials, the use of the positioning systems allows traffickers to determine airdrop coordinates prior to departure, thus reducing the amount of radio communication needed. Officials noted that the increasing use of technology makes it more difficult to gather the information needed to track and interdict the shipment of illegal drugs through the Caribbean because traffickers can detect whether they are being followed.

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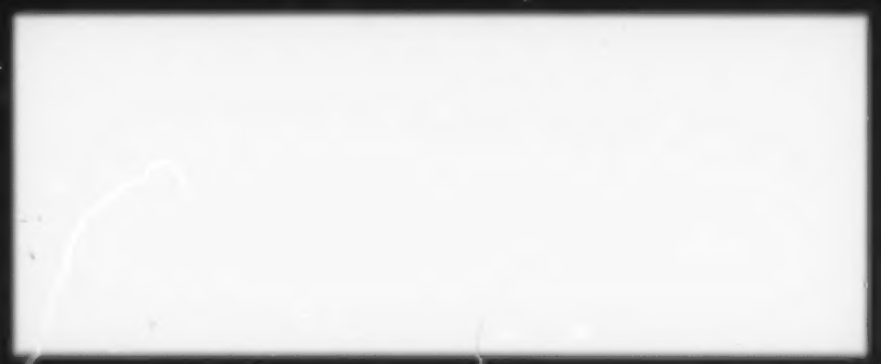

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